Command Reference

for

ＮＰ－２５１１Ｄ－２
ＮＰ－３５１１Ｄ－２

Revision　1.00　2012.09.24　1st edition

All specifications described are subject to change without prior notice.
Though we made assurance doubly sure to write this product specifications,
Please contact us if you find any mistakes and erroneous omitting.

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1. Application

This document is about command and character code table of NP-2511D-2, NP-3511 D-2.
Please refer to product specifications of NP-2511D-2, NP-3511D-2 for their specifications, precaution, and revision history.

2. Command

2.1 Command Table

■ is effective only as Japanese is selected.

*53) – 55) is related to "Black Mark Commands".

*In case print method is a buffer full , print speed will be max. 200mm /sec.

2.2 Printer Driver

Apply the driver stated as below or latest NPI driver (NPI EX driver is recommended).
・NPI EXDriver Ver.1.1.1.0
・NPI Printer_DS2.0

2.3 Command Details

1) [Horizontal Tab] 《HT》
   Code: [09]h
   Print position moves to the next horizontal tab position.
   *Horizontal tab is set by [Horizontal Tab Position Setting] command.
   *Default of [Horizontal Tab Position] is every 8th character (9 digit,17 digit,‥,41digit) in font A.
   (2 inch model is until 33rd digit)
   *If the next [Horizontal Tab] is not set, this command is disregarded.

2) [Print and Line Feed] « LF »
   Code: [0A] h
   Prints out data inside print line buffer and line feeds based on preset line feed quantity.

3) [Carriage Return] « CR »
   Code: [0D] h
   *This command is disregarded.

4) [Software Reset] « DC1 »
   Code: [11]h
   Restarts firmware as same process when turning the power ON.
   *Since this command will be stored in internal reception input buffer and executes sequentially, timing of command receipt and execution will be different.
   *If during cutter movement, software reset will be activated after auto-cutter finishes driving.

5) [Barcode Termination Change] « ESC RS c n »
   Code: [1B]h + [1E]h + [63] + n   *[n = 00, 80]h
   Change terminator of [Barcode print] command with "n".
   *"n" is indicated as follows;

n(hex)	termination
00	[00]h
80	[FF]h

   *Default value of "n" is [00]h

6) [Character Right Space Quantity Setting] « ESC SP n »
   Code: [1B] h + [20]h + n   *[00 ≤ n ≤ 20]h
   Sets right SPACE quantity of character by dot. (1/203 inch unit)
   *Right SPACE is reflected with zoom when double width zoom mode.
   *Default value of "n" is [00]h.

7) [Print Mode Batch Setting] « ESC ! n »
   Code: [1B]h + [21]h + n   *[00 ≤ n ≤ FF]h
   Assings print mode.
   *"n" has the following meaning.

bit	function	value	
		0	1
0	Character font	Font A	Font B
1	Undefined		
2	Undefined		
3	Enhanced	RESET	SET
4	Double height	RESET	SET
5	Double width	RESET	SET
6	Undefined		
7	Underline	RESET	SET

   *If double height and double width are set at the same time, quadruple character will be formed.
   *All of the printed characters will be underlined except for the 90º clock-wise rotated characters and spaces created by [Horizontal Tab].
   *Underline width is determined by the value set in [Underline SET/RESET]. Default value is "1dot" width.
   *Enhanced print control is only effective when Kanji mode
   *Enables to print with different character sizes mixed e.g. double width and normal size etc.
   *Font B is available only when selecting either "International Code Table" or "Japanese Code Table" or "Code Page 858" in [Character Code Table Selection], also when selecting Japanese as language font.
   *Default value of "n" is [00] h.

8) [Absolute Position Setting] « ESC $ n1 n2 »
   Code: [1B]h + [24]h + n1 + n2   * [00 ≤ n1 ≤ FF]h
                                                     * [00 ≤ n2 ≤ 02]h
   Sets print start point from head of the line by number of dot. (by 1/203-inch position)
   *Divide dots at print start point by 256 and quotient shall be "n2" while remainder is "n1".
   *Print start point is (n1 + n2 × 256) from head of the line.
   *Disregards setting beyond end of the line.
   *When this command is received in the middle of line, it will be effective even not passing the current position.

9) ■[Download Characters Set SET/RESET] 《ESC % n》
      *Effective when language font:Japanese is selected.
   Code: [1B]h + [25]h + n   * [00 ≤ n ≤ FF]h
   SET/RESET download characters
   *Only least significant bit (b0) is effective to "n".
   "b0" has the following meaning.

b0	Function
0	RESET download character set
1	SET download character set

   *Default value of "n" is [00] h

10) ■[Download Characters Definition] « ESC & s n m a Dn »

*Valid when Japanese is selected.

Code : [1B]h + [26]h + s + n + m + a + Dn 　　*[s = 03]h

*[20 ≤ n ≤ 7E]h

*[20 ≤ m ≤ 7E]h

*Font A [01 ≤ a ≤ 0C]h

*Font B [01 ≤ a ≤ 09]h

Defines font for download characters of alphanumeric characters.

*"s" indicates number of bytes to define in vertical direction while "a" is number of dots in horizontal.

*"n" indicates the start character code and "m" means end character code. (If only 1 character definition, then "n" = "m".)

*Definable characters are from [20] h ~ [7E]h on ASCII code. (95 characters)

*"Dn" indicates data to be defined and indicates horizontal direction "a"dots pattern from the left edge. Remaining pattern on the right side will be filled with SPACE.

*Download characters once defined by this command remain valid until execution of [Software Reset] or Reset Switch or turning the power OFF.

*Redefinition is only effective to designated area.

＜Reference＞
In case of FontA
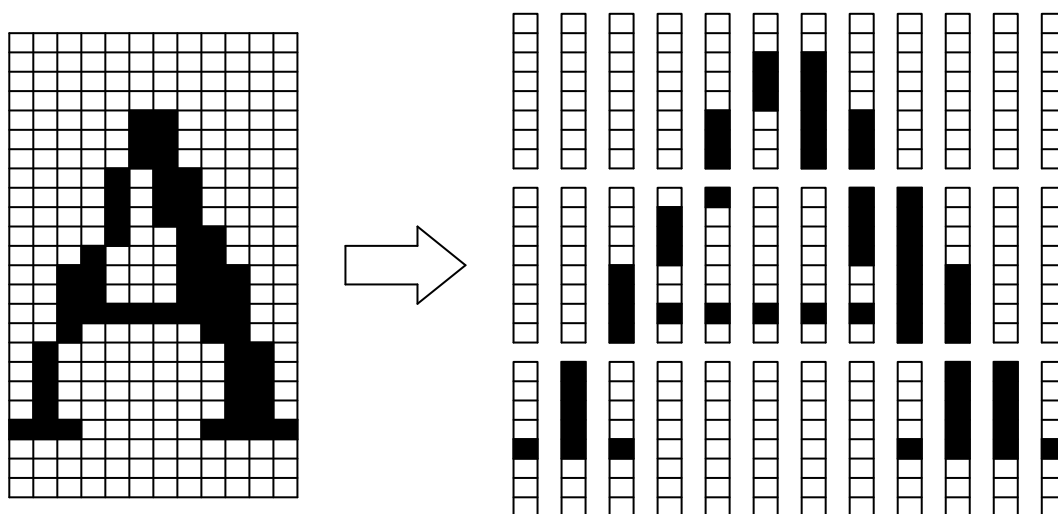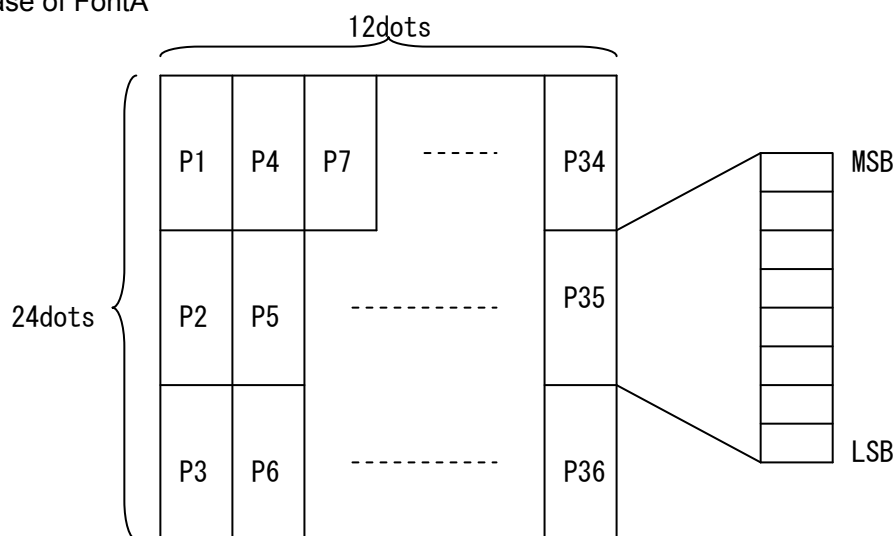
P1= 〔00〕h,P4= 〔00〕h,P7= 〔00〕h,P10= 〔00〕h,…
P2= 〔00〕h,P5= 〔00〕h,P8= 〔0F〕h,P11= 〔72〕h,…
P3= 〔08〕h,P6= 〔F8〕h,P9= 〔08〕h,P12= 〔00〕h,…

<Reference>
In case of Font B

9dots

17dots

P1 P4 P7 ------ P25

P2 P5 ---------- P26

P3 P6 ----------- P27

MSB

LSB

MSB

LSB
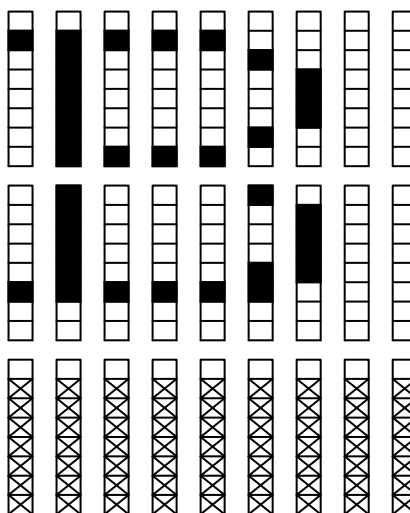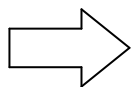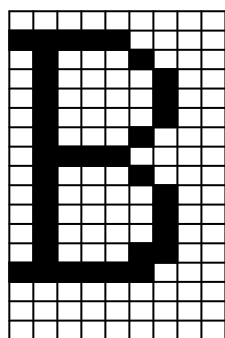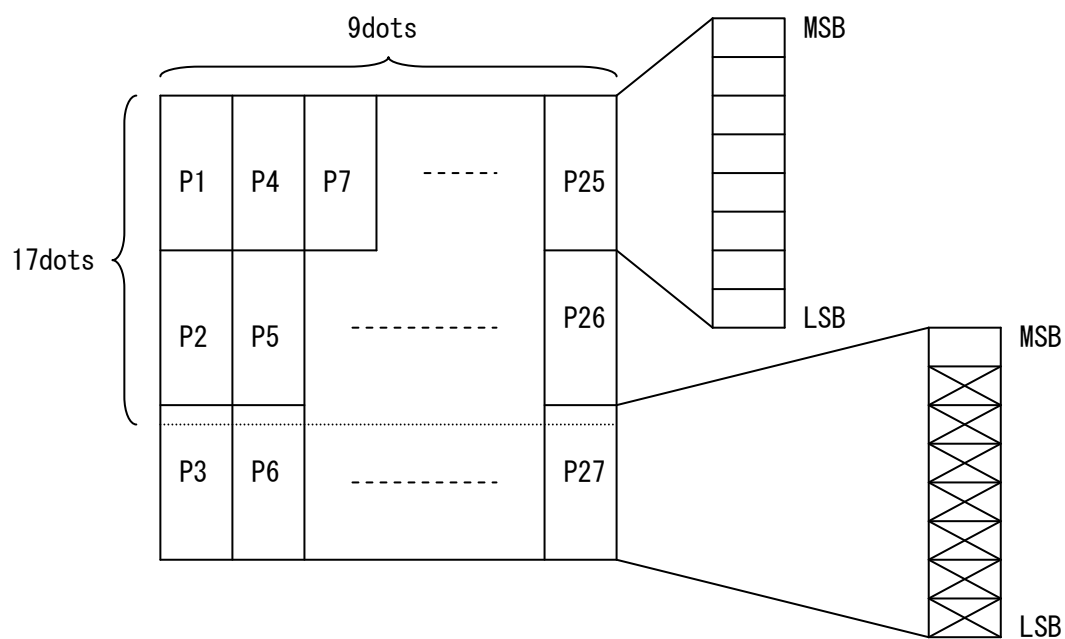
P1=［40］h,P4=［7F］h,P7=［41］h,P10=［41］h,…
P2=［04］h,P5=［FC］h,P8=［04］h,P11=［04］h,…
P3=［00］h,P6=［00］h,P9=［00］h,P12=［00］h,…

11) [Bit Image Mode Setting] «ESC * m n1 n2 Dn»
    Code : [1B]h + [2A]h + m + n1 + n2 + Dn   *[m = refer to the table below]h

                                                                           *[00 ≤ n1 ≤ FF] h

                                                                           *[00 ≤ n2 ≤ 02] h

    Prints data in bit image with resolution designated by "m".
    *Total print dots are divided by 256, quotient shall be "n2" and remainder is "n1".
    *Total print dots in bit image mode are (n1 + 256 × n2).
    *If the input bit image data (Dn) exceeds printable area, exceeding data will be discarded.
    *Bit image data (Dn) interprets bit "1" as print and bit "0" as not print.
    *Bit image mode is indicated below.

＜Standard Mode＞

m(hex)	Bit Image Mode	Vertical Direction		Horizontal Direction		
		Dot Quantity	Dot Density	Dot Density	Max. Dots	
					2-Inch model	3-Inch model
00	8dot single density	8	67DPI	101DPI	224	320
01	8dot double density	8	67DPI	203DPI	448	640
20	24dot single density	24	203DPI	101DPI	224	320
21,23	24dot double density	24	203DPI	203DPI	448	640

<Relationship between Bit Image data and Printed Dot>
*8dots bit image

D1 D2 D3

MSB

LSB

Print Data

□ =1dot

Single density

Double density

*24dots image bit

D1 D4 D7

D2 D5 D8

D3 D6 D9

MSB

LSB

Print Data

D1 D2 D3 D4 D5 D6 D7 D8 D9

□ =1dot

Single density

Double density
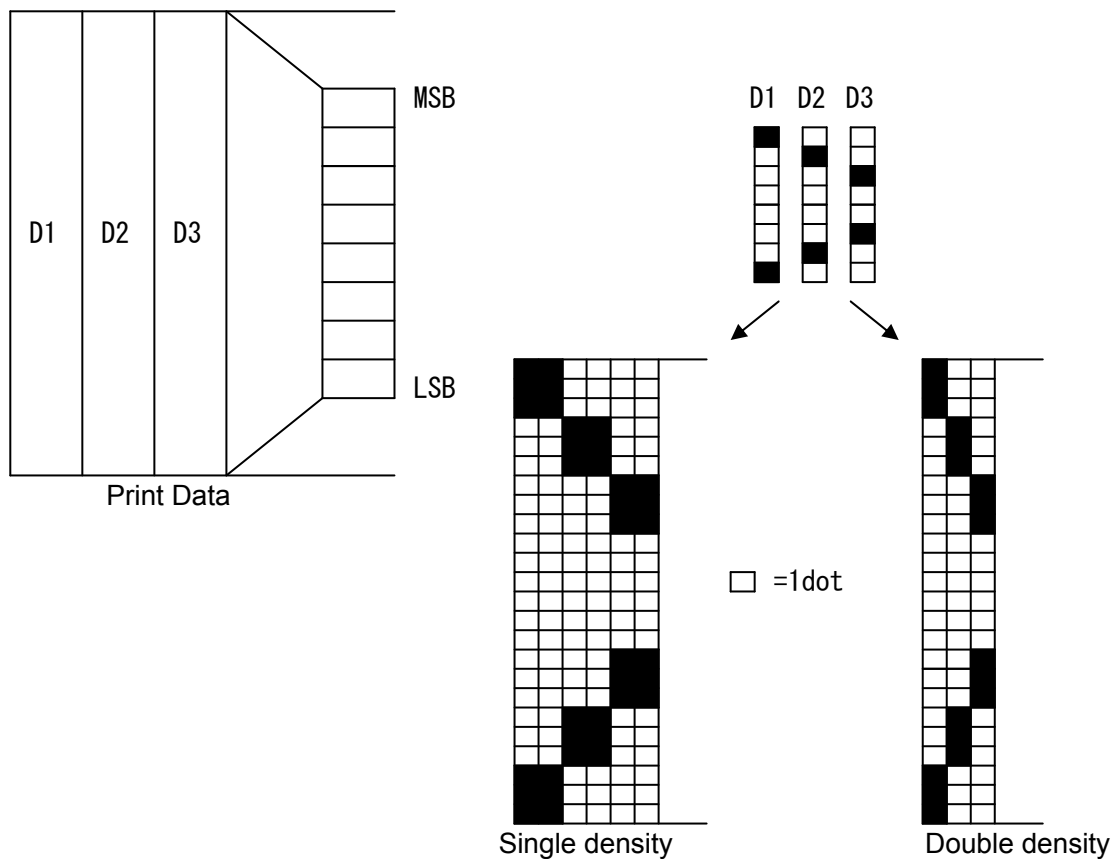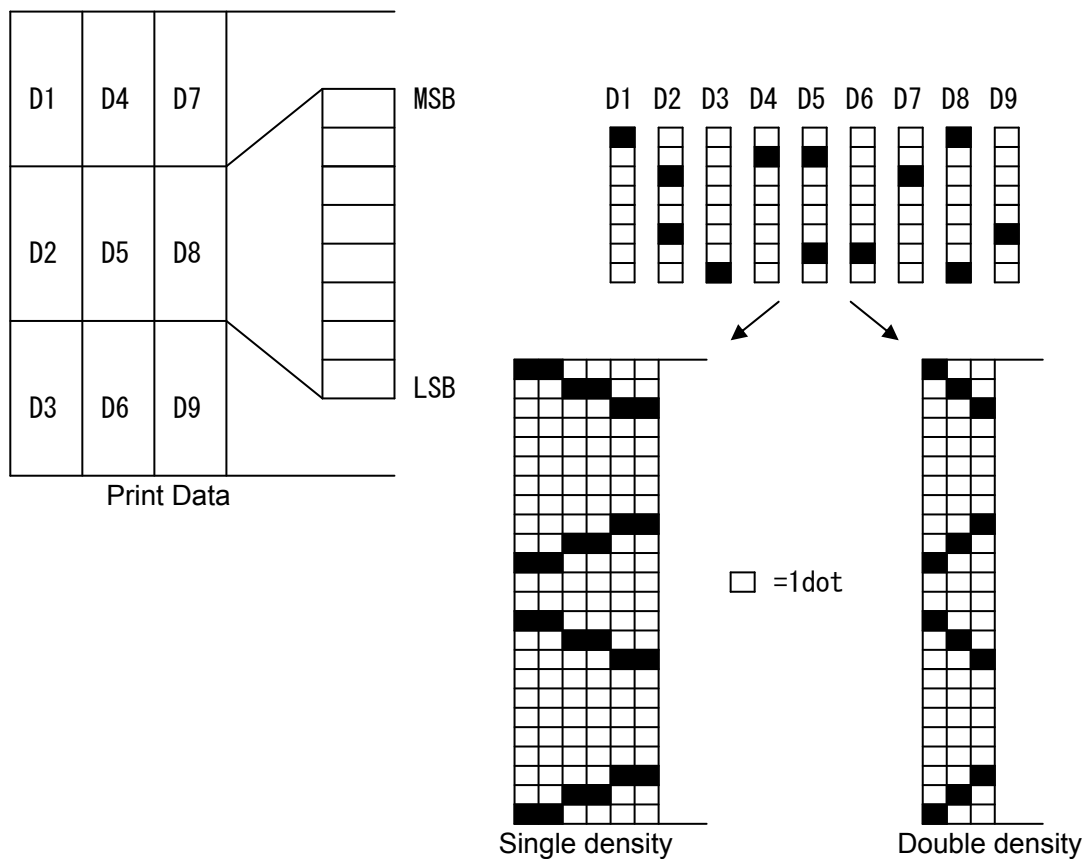
12) [Underline SET/RESET] « ESC – n »
   Code: [1B]h + [2D]h + n   *[00 ≤ n ≤ 02]h
   SET/RESET Underline.
   *Underline is valid to all characters except for area skipped by [Horizontal Tab].
    Also, underline is not valid to 90º clockwise rotated character.
   *This command is not valid when Kanji mode.
   *Underline is verified with "n" value as shown bellow.

n(hex)	Type
00	RESET underline
01	SET one dot underline
02	SET two dot underline

   *Default value of "n" is [00]h.

13) [1/6 inch Line Feed Amount Setting] « ESC 2 »
   Code: [1B] h + [32] h
   Sets one line feed to 1/6 inch.

14) [Line Feed Amount Setting by Smallest Paper Feed Pitch Unit] « ESC 3 n »
   Code: [1B]h + [33]h + n   *[00 ≤ n ≤ FF]h
   Sets line feed amount for a line to n/203 inch.
   *Although setting under value of character's height, it will execute line feed for the amount of
    character's height.
   *Default value of "n" is [22]h.

15) [Data Input Control] « ESC = n »
   Code: [1B]h + [3D]h + n   *[00 ≤ n ≤ FF]h
   Selects available device for data input from the host.
   *Each bit of "n" indicates below;

bit	function	value	
		0	1
0	Printer	INVALID	VALID
1	Undefined		
2	Undefined		
3	Undefined		
4	Undefined		
5	Undefined		
6	Undefined		
7	Undefined		

   *When printer is not selected, all receipt data are deleted until the printer is selected by this
    command.
   *Even if printer is not selected, depending on printer operation it may become busy status.
   *Default value of "n" is [01] h.

16) [Printer Initialization] « ESC @ »
   Code: [1B] h + [40] h
   Clears data stored in the print line buffer and initializes (default status) each setting.
   *Does not clear data stored in the internal receive input buffer.
   *Activate re-reading Dip switch and Memory switch.
   *Stores in receive buffer and executes sequentially.

17) [Back Feed] «ESC B n»
    Code: [1B]h + [42]h + n   *[00 ≤ n ≤ FF]h
  Once this command received, paper is forwarded in reverse direction.
   *Set forwarding amount by "n" Dot line. In case of setting [00]h, no forwarding.
   *Please do not enter this command sequencially for preventing paper jam.
    When back feedi more than [FF]h dot, please use [Back feed (mm/unit)].
   *Backlash may let paper not put properly.
   *If there is print data in Print Line buffer, backfeed is activated after printing.
   *Tip of paper should not be exceeding the limit of back feed.
   (Please refer to 2.4 Cutter specification in Products Specification)

18) [Horizontal Tab Position Setting] « ESC D n1 n2 --- NUL »
    Code: [1B]h + [44]h + n1 + n2 + --- + [00]h   * [00 ≤ n ≤ FF]h
    Sets horizontal tab position.
   *"n" indicates the digits from the head to the tab position.
    In this case, it shall be [n = tab set position – 1].
   *Although tab position is set at the point of (character width x "n") from head of the line, in this
    case, character width includes right SPACE amount of the character and when double width
    zoom is set, width becomes double of ordinary character.
   *Enables to set max. 32 tab positions and settings exceeding this will be ignored.
   *« ESC D NUL » clears all set tab positions.   [Horizontal Tab] after clear is ignored.
   *Default of [Horizontal Tab] is every 8th character (9 digit,17 digit,25digit,33digit,41digit) in font
    A. (2 inch model is until 33rd digit)

19) [Enhanced Print SET/RESET] « ESC E n »
    Code: [1B]h + [45]h + n   *[00 ≤ n ≤ FF]h
    SET/RESET Enhanced Print.
   *Only LSB (least significant bit "b0") is available to "n".
    "b0" has the following meaning.

b0	Value
0	RESET enhanced print
1	SET enhanced print

   *When executing enhanced print, print result may be deformed.
   *Default value of "n" is [00] h.

20) [Double Strike Print SET/RESET] « ESC G n »
    Code: [1B]h + [47]h + n   *[00 ≤ n ≤ FF]h
    SET/RESET Double Strike Print.
   *Only LSB (least significant bit "b0") is available to "n".
    "b0" has the following meaning.

b0	Descriptions
0	RESET Double Strike print
1	SET Double Strike print

   *When Double Strike print, print result may be deformed.
   *Default value of "n" is [00]h.

21) [Print and Line Feed by Smallest Pitch Unit] « ESC J n »
Code: [1B]h + [4A]h + n　　　　　　　　　　　*[00 ≤ n ≤ FF]h
Prints data inside the print line buffer and feeds paper for n/203 inch.
*Line feed quantity does not remain.
*Beginning of the line shall be a next print start point.
*Executes line feed for the amount of character's height, even if setting under value of character's height.

22) ■[International Character Selection] « ESC R n »
*Effective only when selecting either overseas or domestic code in [Character Code Table Selection] in addition to selecting Japanese in language font.
Code: [1B]h + [52]h + n　　　　　　　　　　　*[00 ≤ n ≤ 0C]h
Selects International Characters.
* "n" has the following meaning.

n(hex)	Character Set
00	U.S.A.
01	France
02	Germany
03	U.K.
04	Denmark I
05	Sweden
06	Italy
07	Spain
08	Japan
09	Norway
0A	Denmark II
OB	Spain II
OC	Latin America

*Default value of "n" is [08] h.

23) [90º Clockwise Rotated Character SET/RESET] « ESC V n »
Code: [1B]h + [56]h + n　　　　　　　　　　　*[00 ≤ n ≤ 01]h
SET/RESET 90º clockwise rotated character.
*When 90º clockwise rotated character is set, [Underline Setting] is INVALID.
*"n" has the following meaning.

n(hex)	Descriptions
00	RESET 90º rotated character
01	SET 90º rotated character

*Default value of "n" is [00]h.

24) [Relative Position Setting] « ESC ¥ n1 n2 »
Code: [1B]h + [5C]h + n1 + n2　　　　　　* [00 ≤ n1 ≤ FF]h
　　　　　　　　　　　　　　　　　　　*[00 ≤ n2 ≤ FF]h
Sets print start position by dots in 1/203 inch unit counting from the current position.
Divide the dot number by 256 and quotient shall be "n2" while remainder is "n1".
Rightward defines plus, leftward defines minus.
When "n" dot is set on rightwards, the value is ("n1" + "n2" x 256).
When "n" dot is set on leftwards, the value is set by "n" complement.
"n" dot = 65536 - n
Setting which exceeds end of the line is disregarded.

25) [Position Alignment] « ESC a n »

Code: [1B]h + [61]h + n   *[00 ≤ n ≤ 02]h

Aligns print data in a line at the designated position.

(Except for fixed bit image)

*"n" has the following meaning;

n(hex)	Position
00	Left alignment
01	Centering
02	Right alignment

*Effective only when input in beginning of the line.

*Default value of "n" is [00]h

26) [Raster Bit Image] 《ESC b n1 n2 n3 Dn》
　　Code : 〔1B〕h＋〔62〕h＋n1＋n2＋n3＋Dn

※〔01≦n1≦38〕h : 2-Inch model
※〔01≦n1≦50〕h : 3-Inch model
※〔00≦n2≦FF〕h
※〔00≦n3≦FF〕h

　　Prints data in raster bit image.
*"Dn" is raster bit image data.
*Prints raster bit image of width "n1" byte by height (n2 + 256 x n3) dot lines.
*The total byte of the requested raster bit image data (Dn) is {n1 x (n2 + 256 x n3)}.
*Raster bit image data (Dn) exceeding the printing area will be disregarded.
*Raster bit image data (Dn) interprets bit "1" as print and bit "0" as not print.
*Relation between raster bit image data and printed dots are as follows.

n1 byte

D1	D2	————————	Dn1
Dn1+1	Dn1+2	————————	Dn1*2
Dn1*2+1	Dn1*2+2	————————	Dn1*3
·——————	·——————	————————	n1*(n2+(256*n3))

n2+(256*n3)dots

MSB　　　　　　　　　　　LSB
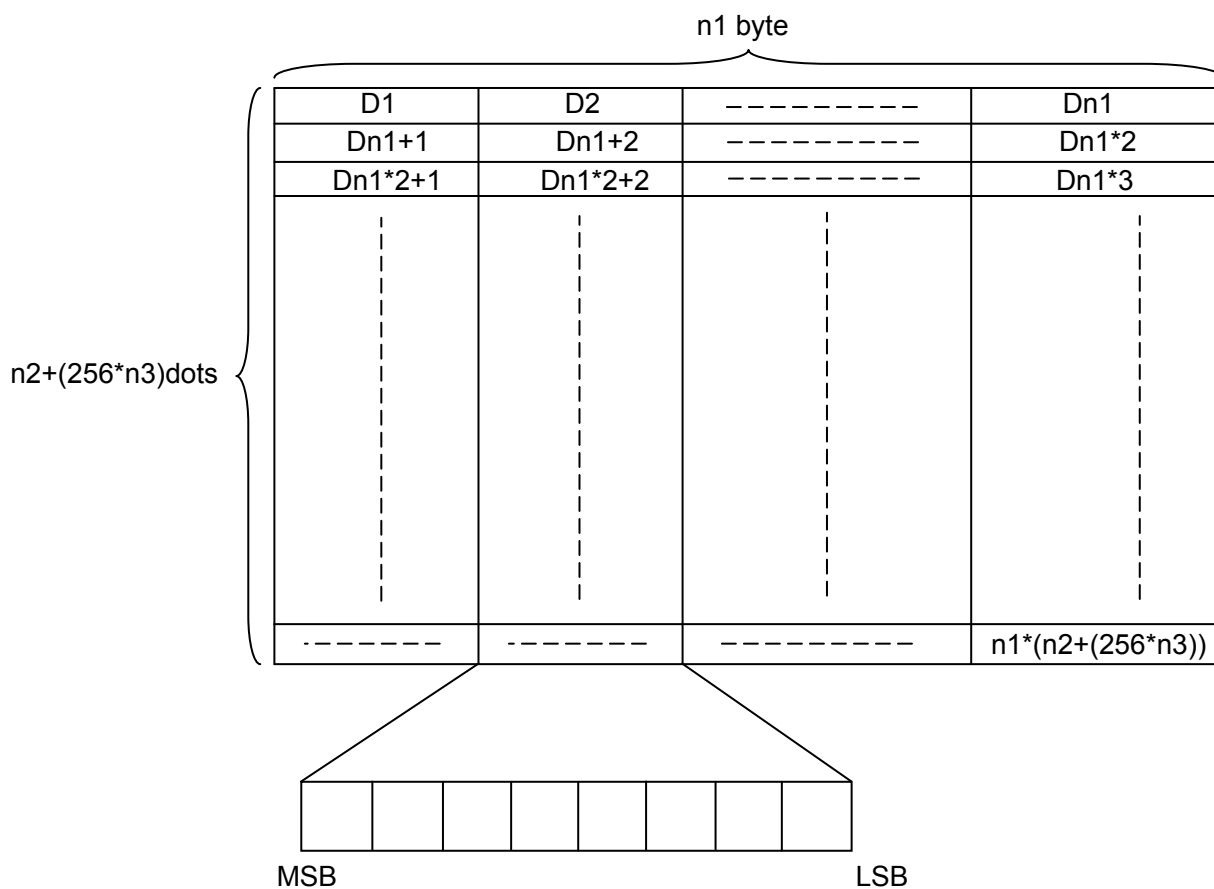
*Make sure to add « ESC J 00h » ([1B]h + [4A]h + [00]h) at the end of this command.
*Data of this command starts printing after buffering regardless of [Print start/finish Setting] command.

27) [Feed Switch VALID/INVALID] « ESC c 5 n »
Code: [1B]h + [63]h + [35]h + n   *[00 ≤ n ≤ FF]h
Changes the FEED switch valid or invalid
*Only LSB (least significant bit "b0") is available to "n".
"b0" has the following meaning.

B0	Description
0	Enable FEED switch
1	Disable FEED switch

*Default value of "n" is [00]h.

28) [Print and "n" Line Feed] « ESC d n »
Code: [1B]h + [64]h + n   *[00 ≤ n ≤ FF]h
Prints data inside print line buffer and feeds paper for "n" lines.
*Setting amount does not remain.
*Beginning of the line shall be the next print start position.
*If there is print data remained, it definitely performs line feed at least for the same height of
   the character.
*When "n"lines x line feed amount is over 100mm, line feed amount will be 100mm.

29) [Presenter Ejection/Retraction Mode Selection] «ESC h n»
*This command is effective only for using presenter.
Code: [1B]h + [68]h + n   *[00 ≤ n ≤ 07]h
Selects presenter mode.
*Contents of the mode differ depending on model of the presenter.
*"n" has following meanings.

Presenter	n(hex)	Function
NPT-301	00	Clamp Ejection
	01	Complete Ejection
NPT-306	00	Auto Retraction
	01	Auto Ejection
	02	Manual Retraction
	03	Manual Ejection
	04	Complete Retraction
	05	Complete Ejection
	06	Function OFF Retraction
	07	Function OFF Ejection

*Default value of "n" is [00]h.
*Please refer to "Details of NPT-306 movement mode" for details of each mode on next page.
*"Function OFF Retraction" or "Function OFF Ejection" is recommended when printing length
   more than 250mm.

30) [Full Cut] «ESC i»
Code: [1B]h + [69]h
*Executes full cut of the paper.
*Only effective at the head of a line

31) [Partial Cut A] «ESC m»
Code: [1B]h + [6D]h
*Executes partial cut (center is left uncut.)
*Only effective at the head of a line.
*Full cut is activated when using NPT-306.
*Please do not use this command with the printer dedicated to FULL cut, [NP-2511F/3511F].

Description for NPT-306 operation mode

Mode	Clamp	Retraction Condition	Ejection Condition
Auto Retraction	YES	•Cover OPEN/CLOSE •Feed SW ON •Receives presenter retraction of [Presenter Ejection/Retraction] command. •Receives Print / Paper Feed related command. •Elapses time set in [Presenter Auto Ejection/Retraction Time Setting] command.	•Receives presenter ejection in [Presenter Ejection/Retraction] command.
Auto Ejection	YES	•Receives presenter retraction of [Presenter Ejection/Retraction] command.	•Cover OPEN/CLOSE •Feed SW ON •Receives presenter ejection in [Presenter Ejection/Retraction] command. •Receives Print / Paper Feed related command. •Elapses time set in [Presenter Auto Ejection/Retraction Time Setting] command.
Manual Retraction	YES	•Cover OPEN/CLOSE •Feed SW ON •Receives presenter retraction of [Presenter Ejection/Retraction] command. •Receives Print / Paper Feed related command.	•Receives presenter ejection in [Presenter Ejection/Retraction] command.
Manual Ejection	YES	•Receives presenter retraction of [Presenter Ejection/Retraction] command.	•Cover OPEN/CLOSE •Feed SW ON •Receives presenter ejection in [Presenter Ejection/Retraction] command. •Receives Print / Paper Feed related command.
Complete Retraction	NO	•Full cut	
Complete Ejection	NO		•Full cut
Function OFF Retraction	NO	•Full cut	
Function OFF Ejection	NO		•Full cut

•"Clamp" means the presenter is in status of waiting for paper extraction.

•Function OFF is to activate presenter motor synchronized with the paper feed motor and not to function as a presenter.

However, since a paper detection processing and an ejection/retraction processing function are kept, paper detection error occurs if the paper does not go inside the presenter while presenter ejection error occurs if the paper does not eject from the presenter.

•Paper Detection will not activate for feeding quantitative paper after cover open/close.

•Paper Detection Error occurs if there is no paper inside presenter when paper end is occurred.

Since leaving a short reed-shaped paper causes paper jam, make sure to remove it by opening the cover.

32) [Partial Cut B] «ESC n»
   Code: [1B]h + [6E]h
   *Executes partial cut (A few mm in the center is left uncut)
   *Only effective at the head of a line.
   *Uncut part is somewhat wider than that of "Partial Cut A".
   *Full cut is activated when using NPT-306.
   *Do not use this command for the printers dedicated FULL cutting
     models,[NP-2511F/3511F].

33) [Compulsory Ejection] «ESC r n»
   *This command is effective only when use of presenter (NPT-301)
   Code: [1B]h + [72]h + n   *[00 ≤ n ≤ 01]h
   [Compulsory Ejection] is used when desired to compulsorily complete ejecting paper under
   status of non-removal paper after clamp ejection for over certain period of time.
   *This command makes motor rotate forward or reverse until paper is ejected completely.
   *"n" has the following meanings.

n(hex)	Motor
00	Forward Rotation
01	Reverse Rotation

34) [Presenter Ejection/Retraction] «ESC r 0 n»
   *This command is effective only when using the presenter (NPT-306).
   Code: [1B]h + [72]h + [30]h + n   *[00 ≤ n ≤ 01]h
   Conducts presenter Ejection/Retraction movement.
   *When receiving this command it conducts Ejection/Retraction after releasing clamp status.
   *It is effective only when selecting "Auto Ejection/Retraction" or "Manual Ejection/Retraction
     Mode" and the printer status is in clamp status.

n(hex)	Function
00	Presenter Retraction
01	Presenter Ejection

35) [Presenter Auto Ejection/Retraction Time Setting] «ESC r 1 n»
   *This command is effective only when use of presenter (NPT-306).
   Code: [1B]h + [72]h + [31]h + n   *[00 ≤ n ≤ 3C]h
   Sets the time from clamp status to Auto Ejection/Retraction when selecting Auto
   Ejection/Retraction Mode.
   *Time set by "n" is as follows.
    {The time for Auto Ejection/Retraction = n x 1.0sec}
   *Default value of "n" is [04]h.

36) [Printer Information Transmission] « ESC s n »
   Code: [1B]h + [73]h + n
   Transmits printer information.
   *"n" and details of returned data are as follows.

n(hex)	Printer Information	Returned data format	Returned data length
02	Model Info.	Variable-length string (terminal NULL=00h)	Max. 32Byte
03	F/W version info.	Fixed-length string	8Byte
04	Boot version info.	Fixed-length string	8Byte
05	SW setting info.	Fixed-length string Hex data (DS1setting+MS2setting+00h+00h)	4Byte
14	USB serial No.	Fixed-length string	8byte

        Returned format
   [FF]h + n(*1) + returned data (*1) → designated "n" in command.
   *Please refer to [Products specification 3.2.6] Data transmission[*4] for transmission format.

37) ■[Character Code Table Selection] « ESC t n »
　　*It is effective only when Language font:Japanese is selected.
　　　Code: [1B]h + [74]h + n　　　　　　　　　　*[00 ≤ n ≤ 07]h
　　　Selects character code table
　　　*"n" has the following meaning.

n(hex)	Font Table
	Japanese
00	International Code page
01	Japanese Code page
02	Code Page 858
03	Code Page 1250
04	Code Page 1251
05	Code Page 1252
06	Code Page 1254
07	User Code Page

　　*Default value of "n" is [01]h

38) [Printer Status Transmission] « ESC v »
　　　Code: [1B]h + [76]h
　　Transmits current printer status.
　　　*Status to transmit is one byte. Refer to 4.2 1) Error Detection Details of Product
　　　　Specifications for the contents. Also, please refer to [Products specification 3.2.6] Data
　　　　transmission[4]] for transmission format.
　　　*Transmit one byte after confirmation of receivable status on host. (CTS signal: SPACE status)
　　　*When host is unreceivable status (CTS signal: MARK status), printer waits until host turns to
　　　　receivable.
　　　*This command is effective only for SERIAL Interface.
　　　*Make sure to issue command before transmit of print data.
　　　(Stored into internal receipt input buffer and executes sequentially.)
　　　*Receivable except when internal receipt input buffer is full.

39) [Inverted Character SET/RESET] « ESC { n »
  Code: [1B]h + [7B]h + n   ※〔00≦n≦FF〕h
  SET/RESET Inverted print function.
  *Only LSB (least significant bit "b0") is available to "n".
  "b0" has the following meaning.

b0	Descriptions
0	RESET inverted character
1	SET inverted character

  *The command is only valid when it is assigned at the beginning of a line.
  *Default value of "n" is [00]h.

40) [Partition Drive Selection] « GS % n »
  Code: [1D]h + [25]h + n   *[00 ≤ n ≤ 03]h
  Selects partition drive.
  *"n" has the following meaning.

n(hex)	Partition
01	Fix without partition
02	Fix in dual partition
03	Optimization

  *Default value of "n" is [03]h.
  *Will be disregarded and DO NOT change when out of range.

41) [Black and White Reverse Print SET/RESET] « GS B n »
  Code: [1D]h + [42] + n   *[00 ≤ n ≤ FF]h
  SET/RESET black and white reverse print.
  *Only LSB (least significant bit "b0") is available to "n".
  "b0" has the following meaning.

b0	Function
0	RESET Black and White reverse print
1	SET Black and White reverse print

  *Black/white reverse print is applicable to built-in characters and downloaded characters.
  *Right side SPACE of set character in [Character Right Space Quantity] is also applied to black/white reverse print. However, it does not cover the skipped SPACE created by bit image, raster bit image, fixed bit image, barcode, HRI characters, [Horizontal Tab], [Absolute Position Setting], [Relative Position Setting].
  *Does not affect to SPACE between the lines.
  *Setting reverse print has priority over underline setting. Thus, even when underline is set, underline will not be added to black/white reverse character. However, underline setting remains effective.
  *When black/white reverse print, print result may be crushed.
  *Default value of "n" is [00]h.

42) [Print START/FINISH Setting] « GS G n »
This command enables to judge whether print movement is finished or not by monitoring bit7 of printer status.

1) Print START/FINISH Setting (n = [00]h, [01]h, [10]h, [11]h)
(1) [Print START Setting (w/o JOB ID)]
Code: [1D]h + [47]h + [01]h
Sets "1" to bit7 of printer status.

(2) [Print FINISH Setting (w/o JOB ID)]
Code: [1D]h + [47]h + [00]h
Sets "0" to bit7 of printer status.

(3) [Print START Setting (w/JOB ID)]
Code: [1D]h + [47]h + [11]h + ID1 + ID2 + ID3 + ID4
Sets "1" to bit7 of printer status.
• Sets JOB ID (4Byte)
• Holds printer status that are logical added (OR) from START setting to FINISH setting as complete status.

(4) [Print FINISH Setting (w/JOB ID)]
Code: [1D]h + [47]h + [10]h
Sets "0" to bit7 of printer status.
• Transmits print FINISH notification of the following format.
  [FF]h + [13]h + JOB ID(4Byte) + FINISH status(1Byte) + Backup(3Byte)

2) Buffering Print START/FINISH Setting (n = [20]h, [21]h, [30]h, [31]h)
*Received data is once buffered in the page buffer in print image ,and prints out buffered image once receiving a print finish setting.
*Although a little time-lag remains from "Reception Start" to "Print Start", print movement will be stabled at the maximum speed. However, since there is a limit in buffer memory, in case of printing image exceeding 160mm printing length, memory storages every 160mm and repeats print movement. Printing stops once and restarts on the edge.
*When print stop error occurs during printing the data pinched between "Print start setting" and "Print finish setting", print data until "Print finish setting" is discarded.

(1) [Buffering Print START Setting (w/o JOB ID)]
Code: [1D]h + [47]h + [21]h
Sets "1" to bit7 of printer status and starts buffering.

(2) [Buffering Print FINISH Setting (w/o JOB ID)]
Code: [1D]h + [47]h + [20]h
Prints image buffered inside page buffer and sets "0" to bit7 of printer status.
• Clears page buffer.

(3) [Buffering Print START Setting (w/JOB ID)]
Code: [1D]h + [47]h + [31]h + ID1 + ID2 + ID3 + ID4
Sets "1" to bit7 of printer status and starts buffering.
• Sets JOB ID (4Byte)
• Holds printer status that are logical added (OR) from START setting to FINISH setting as FINISH status.

(4) [Buffering Print FINISH Setting (w/JOB ID)]
Code: [1D] h + [47]h + [30]h
Prints image buffered inside page buffer memory and sets "0" to bit7 of printer status.
•Clears Page buffer.
• Transmits print FINISH notification of the following format.
  [FF]h + [13]h + JOB ID(4Byte) + FINISH status(1Byte) + Backup(3Byte)

 *When continuously using this command with USB interface, use only n = [31]h, [30]h and
  make sure to transmit next [Print START Setting] command after receipt of FINISH status.

43) [HRI Character Printing Position Selection] « GS H n »
    Code: [1D]h + [48]h + n   *[00 ≤ n ≤ 03]h
    Selects printing position of HRI character when printing barcode.
    *"n" has the following meaning.

n(hex)	Printing position
00	No printing
01	Above barcode
02	Under barcode
03	Above & Under barcode

    *HRI character will be printed by font selected in [HRI Character Font Selection].
    *Default value of "n" is [00]h.

44) [Fixed Bit Image Print] « GS P n »
    Code: [1D]h + [50]h + n   *[00 ≤ n ≤ 02]h
    Prints print data of registered bit image.
    *Selects one of the three registered print patterns by assigning 00 ~ 02 values in "n".
    *"n" has the following meaning.

n(hex)	Print Pattern
00	Pattern 0
01	Pattern 1
02	Pattern 2

45) [Fixed Bit Image Registration] « GS T n »
    Code: [1D]h + [54]h + n
    Registers print data of predetermined bit image.
    *Enables to register 3 patterns starting from "0" ~ "2".
    *Each pattern can be registered up to max. 64k Byte. (Part exceeding max. value is
     discarded.) Refer to the following formula for registered data size.
     Print area(mm) x dot number of bit image for vertical direction X number of bit image
    *Registered data will not be erased either by turning the power OFF/ON, commanding
     [Printer Initialization] or [Software Reset] or executing RESET switch.
    *"n" has the following meaning.

n(hex)	Function
0	START registration of pattern "0"
1	START registration of pattern "1"
2	START registration of pattern "2"
FF	FINISH registration

    *When starting registration in the middle of a line, all of the line will be registered.
    *When finishing registration in the middle of a line, the line will not be registered.

  <Command sequence for registering pattern "0">
  GS T 00h + (Bit image data by ESC *) x "n" line + GS T FF h

46) [Firmware Download] « GS d Dn »
   Code: [1D]h + [64]h + Dn
   *Downloads printer firmware in hexadecimal code and rewrites firmware according to the outcome, and reboots.
   *"Dn" is HEX code of firmware and complies with INTELLEX HEX format.

47) [HRI Character Style Selection] « GS f n »
   Code: [1D]h + [66]h + n   *[00 ≤ n ≤ 01]h
   *Selects font of HRI character style when printing   barcode.
   *"n" has the following meaning.

n(hex)	Font style
00	Font A
01	Font B

   *Default value of "n" is [00]h.

48) [Barcode Height Selection] « GS h n »
   Code: [1D]h + [68]h + n   *[01 ≤ n ≤ FF]h
   Sets the height of barcode by dot.
   *"n" indicates dot number for vertical direction.
   *Default value of "n" is [A2] h. (162dots)

49) [Barcode Print] « GS k n Dn NUL »

    Code: [1D]h + [6B]h + n + Dn + [00]h   *[00 ≤ n ≤ 07]h

    Selects barcode symbology and prints barcode.

    *Beginning of the line shall be a next print start position.

    *Selects following barcode symbology with "n" value.

n(hex)	Barcode Symbology
00	UPC-A
01	UPC-E
02	JAN-13 (EAN-13)
03	JAN-8 (EAN-8)
04	CODE39
05	ITF
06	CODABAR (NW-7)
07	CODE128

    *"Dn" indicates the character code to be printed.

    *When character code "Dn" is not printable character, following data after "Dn" will be treated as normal print data.

    *When selecting barcode symbology that print character number is fixed, character number must be matched to the print character number.

    *Does not print barcode when horizontal data exceeds length of a line.

    *[00]h at the end of this command can be changed to [FF]h by [Barcode End Change].

    *Refer to [Barcode Specifications Details] of appendix for details of barcodes.

50) [Auto-transmitting of Printer Status] 《GS v NUL》

    Code: [1D]h + [76]h + [00]h

    Auto-transmits status when printer status changed.

    *Status that will be transmitted is 1 byte. Please refer to "Product specifications 4.2.1) Error Detection Details" for contents. Also, please refer to [Product specifications 3.2.6) Data transmission] for transmission form.

    *Once the setting is done, it is effective until executing [Software Reset], reset switch or turning the power OFF.

    *This command is stored in internal reception input buffer and executes sequentially.

51) [Barcode Width Selection] « GS w n »

    Code: [1D]h + [77]h + n   *[02 ≤ n ≤ 04]h

    Selects horizontal size of barcode.

    *Default value of "n" is [03]h

Barcode Detail Specifications

Name	Number	Types of Character	Remarks
UPC-A	12	Numbers (0~9)	*Check digit that has calculated inside printer will be automatically added to 12th digit. *Calculated value will be prioritized if numerical value differs from 12th digit.
UPC-E	8	Numbers (0~9)	*12 digit data will be compressed to 8 digit inside of printer. *Check digit that has calculated inside printer will be automatically added to 8th digit. *Calculated value will be prioritized if numerical value differs from 12th digit.
JAN-13 (EAN-13)	13	Numbers (0~9)	*Check digit that has calculated inside printer will be automatically added to 13th digit. *Calculated value will be prioritized if numerical value differs from 13th digit.
JAN-8 (EAN-8)	8	Numbers (0~9)	*Check digit that has calculated inside printer will be automatically added to 8th digit. *Calculated value will be prioritized if numerical value differs from 8th digit.
CODE39	Flexible length	Number (0~9) Alphabet (A~Z) Marks ($%*+ –./:SPACE) Start/Stop Code (*)	*Make sure to enter Start/Stop Code "*".
ITF	Even	Number: 0~9	*DO NOT print when letters are odd numbers.
CODABAR (NW-7)	Flexible length	Number (0~9) Marks ($%*+ –./:SPACE) Start/Stop Code (ABCD) (abcd)	*Make sure to input "Start/Stop Code" *Although can be printed out without "Start/Stop Code", it unable to read-out by scanner etc.

*Refer to next page for "CODE128".

CODE128

1. Overview
   Overview
   2 digits-characters are rendered by ASCII 128 characters (numeric characters, capitals/lower cases, symbols and control codes) with one barcode pattern. A number of numeric characters to render is variable-length. Stop character and check digits are automatically attached.

2. Character types
   – Code set A: [00]h ~ [5F]h -- 0-9, A-Z, ASCII control codes, special characters
   – Code set B: [20]h ~ [7F]h -- 0-9, A-Z, a-z, special characters
   – Code set C: 00-99 (double density encoding of numeric only data)
   – Special characters:
   1) Start character / code definition character (CODE A, CODE B and CODE C)
      The barcode data has to start with this character.
      You can change the code set from one to the other in the barcode data.
   2) Shift character (SHIFT)
      Code set A: One character right after SHIFT is treated as a character from code set B.
      Code set B: One character right after SHIFT is treated as a character from code set A.
      Code set C: Unavailable
   3) Function characters (FNC1, FNC2, FNC3, and FNC4)
      These characters depend on an application.
      Code set C can handle only "FNC1."

3. Specifications
   – Command execution is halted if the barcode data does not start with a "start character."
   – Command execution is halted if the combination of "{" and the next character is not a defined special character.
   – To use "{" as a character, the string has to be "{{" ([7B]h + [7B]h).
   – When any character which cannot be included in its code set is included in the data, barcode is printed but not readable by a scanner.
   – To use [00]h as a code, change the barcode termination character to [FF]h with "Barcode termination command."
   – HRI characters of control/special characters:
   1) Control characters ([00]h~[1F]h, [7F]h)
      A space character is printed.
   2) Start character / code definition character (CODE A, CODE B and CODE C)
      Nothing is printed.
   3) Shift character (SHIFT)
      Nothing is printed.
   4) Function characters (FNC1, FNC2, FNC3, and FNC4)
      A space character is printed.

4. Character Table
   Special Characters

	ASCII	Hexadecimal
CODE A	{A	[7B]h + [41]h
CODE B	{B	[7B]h + [42]h
CODE C	{C	[7B]h + [43]h
SHIFT	{S	[7B]h + [53]h
FNC 1	{1	[7B]h + [31]h
FNC 2	{2	[7B]h + [32]h
FNC 3	{3	[7B]h + [33]h
FNC 4	{4	[7B]h + [34]h

Code Set A

HEX	0	1	2	3	4	5
0	NULL	DLE	SP	0	@	P
1	SOH	DC1	!	1	A	Q
2	STX	DC2	"	2	B	R
3	ETX	DC3	#	3	C	S
4	EOT	DC4	$	4	D	T
5	ENQ	NAK	%	5	E	U
6	ACK	SYN	&	6	F	V
7	BEL	ETB	'	7	G	W
8	BS	CAN	(	8	H	X
9	HT	EM	)	9	I	Y
A	LF	SUB	*	:	J	Z
B	VT	ESC	+	;	K	[
C	FF	FS	,	<	L	¥
D	CR	GS	-	=	M	]
E	SO	RS	.	>	N	^
F	SI	US	/	?	O	_

Code set B

HEX	2	3	4	5	6	7
0	SP	0	@	P	`	p
1	!	1	A	Q	a	q
2	"	2	B	R	b	r
3	#	3	C	S	c	s
4	$	4	D	T	d	t
5	%	5	E	U	e	u
6	&	6	F	V	f	v
7	'	7	G	W	g	w
8	(	8	H	X	h	x
9	)	9	I	Y	i	y
A	*	:	J	Z	j	z
B	+	;	K	[	k	{
C	,	<	L	¥	l		
D	-	=	M	]	m	}
E	.	>	N	^	n	~
F	/	?	O	_	o	DEL

Code set C

HEX	0	1	2	3	4	5	6
0	00	16	32	48	64	80	96
1	01	17	33	49	65	81	97
2	02	18	34	50	66	82	98
3	03	19	35	51	67	83	99
4	04	20	36	52	68	84	
5	05	21	37	53	69	85	
6	06	22	38	54	70	86	
7	07	23	39	55	71	87	
8	08	24	40	56	72	88	
9	09	25	41	57	73	89	
A	10	26	42	58	74	90	
B	11	27	43	59	75	91	
C	12	28	44	60	76	92	
D	13	29	45	61	77	93	
E	14	30	46	62	78	94	
F	15	31	47	63	79	95	

52) [Print Density Setting] « GS ~ n »
    Code: [1D]h + [7E]h + n   *[41 ≤ n ≤ 87]h
    Sets print density in the range from 65% to 135%.
    *Though "n" range has [41]h (65%) ~ [87]h (135%), please set in the range of [41]h (65%) ~
     [82]h (130%) in actual use.
    *Default value of "n" is [64] h.
    *When using this command while [Print START/FINISH Setting] command, the setting is
     disregarded.
    *When using this command while [Buffering Print START/FINISH Setting], [Page Buffer
     Layout START/FINISH Setting] commands, the setting is disregarded.

53) [Cue Operation] «Gs FF n»
    Code: [1D]h + [0C]h + n   *[n = 00, 10, 11]h
    Executes preset position correction feed after detecting black mark.
    *Paper detection error happens after paper FEED Max.160mm when black mark is
    not detected.
    *"n" has following meaning.

n(hex)	Description
00	Mark detection + feed to print start position
10	Mark detection + feed to cut position + full cut
11	Mark detection + feed to cut position + partial cut A

    *Please do not use [11]h with the printers dedicated FULL cutting.

54) [Mark Detection Method & Position Correction Feed Amount Setting] «Gs (m a n1 n2»
    Code: [1D]h + [28]h + m + a + n1 + n2   *[m = 00, 01]h, [a = 00, 01]h
                                                             *[01 ≤ n1 ≤ FF]h
                                                             *[01 ≤ n2 ≤ FF]h

    Sets mark detection method and feed amount for position correction.
    *"m", "a", "n1", "n2" has following meaning.

Set Item m(hex)		Detecting Method a(hex)		Setting value (n2 x 256 + n1)
00	Feed amount to print start position	00	Upper edge	Set a position from mark detection to print start by dot.
		01	Lower edge	
01	Feed amount to cut position	00	Upper edge	Set a position from mark detection to cut postion by dot.
		01	Lower edge	

    *Feed amount is set by dot with signed 16 bit (–32767 ~ 32767), upper bit is set by "n2" while
     lower bit by "n1".
    *When feed amount is set in negative, make sure paper edge does not exceed back feed limit.
    (Refer to cutter specifications).
    *Default values are as follows:

Item	Detecting Method	Preset Value
Print start position	Upper edge	92 dot (11.5mm: between sensor ~ head
Cutting position	Upper edge	168dot (21mm: between sensor~cutter)

55) [Cue Process Set at Setting Paper] «Gs m n »
    Code: [1D]h + [6D]h +n   *[00 ≤ n ≤ FF]h
    Sets cue process when loading roll paper.
    *Each bit of "n" has a following meaning.

Bit	Function	Value	
		0	1
0	Cue operation after auto loading	INVALID	VALID
1	Cue operation after thermal head cover open/close	INVALID	VALID
2	Cue operation after Feed switch push	INVALID	VALID

    *This cue operation is same as selecting «Gs FF [10] h».
    *Default value of "n" is [00] h

56) [Printable Area Set] «Gs W n1 n2»

Code : [1D]h + [57]h + n1 + n2   *[00 ≤ n1 ≤ 50]h:3 Inch model

                                              *[00≤ n1 ≤ 38]h:2 Inch model

Set left margin and printable area   *[03 ≤ n2 ≤ 4D]h

*"n1" = left margin (mm)

*"n2" = printable area (mm)

*Right margin (mm) = Paper width– (left margin + printable area)

*Refer to [Product specification 2.3 Printable Area] for detailed explanation.

57) [Maximum Printing Speed Set] «GS S n»

Code: [1D]h + [53]h + n   *[00 ≤ n ≤ 04]h

Set maximum printing speed at bufferfull print.

"n"has the following meaning.

n(hex)	Maximum Print Speed
00	Max. 200mm/sec
01	Max. 150mm/sec
02	Max. 125mm/sec

n(hex)	Maximum Print Speed
03	Max. 100mm/sec
04	Max. 75mm/sec

*Default value of "n" is [00]h

58) [Batch Setting of Japanese Kanji Print Mode] « FS ! n »

Code: [1C]h + [21]h + n   *[00 ≤ n ≤ FF]h

Sets print modes of Japanese Kanji all at once.

*"n" has the following meaning.

Bit	Function	Value	
		0	1
0	Undefined		
1	Undefined		
2	Double width	RESET	SET
3	Double height	RESET	SET
4	Undefined		
5	Undefined		
6	Undefined		
7	Underline	RESET	SET

*When setting both double height and double width , quadruple character will be formed.

*All of the printed characters will be underlined except for the 90º clockwise rotated characters and spaces created by [Horizontal Tab] command.

*Underline width is determined by the value set in [Japanese Kanji Underline SET/RESET]. Default value is 1dot width.

*Different sizes of characters mixed such as normal size, double height, double width and quadruple can be printed.

*Combined print with ANK Character is also available.

*Default value of "n" is [00]h.

59) ■[Japanese Kanji Mode Setting] « FS & »

*It is effective only when Japanese is selected in language font.

Code: [1C]h + [26]h

Sets Japanese Kanji mode.

*It will be ineffective, when Japanese is selected with Shift JIS in Japanese Kanji Code system.

*Default status is release of Japanese Kanji mode.

60)   [Japanese Kanji Underline SET/RESET] « FS – n »
Code: [1C]h + [2D]h + n   *[00 ≤ n ≤ 02]h
SET/RESET underline of Japanese Kanji

*All of the printed characters will be underlined except for the 90º clockwise rotated characters and spaces created by [Horizontal Tab] command.

*This command is not effective when release status of Japanese Kanji mode.

*"n" has the following meaning.

n(hex)	Function
00	RESET underline of Japanese Kanji
01	Set "1" dot underline of Japanese Kanji
02	Set "2" dot underline of Japanese Kanji

*Default value of "n" is [00]h.

61) ■[Japanese Kanji Mode RESET] « FS . »
*Valid only when Japanese is selected in language font.
Code: [1C]h + [2E]h
RESET Japanese Kanji mode.

*It will be ineffective, when Japanese is selected with Shift JIS in Japanese Kanji Code system.

*Default status is release of Japanese Kanji mode.

62) ■[Definition of Extra Characters] « FS 2 a1 a2 Dn »

    *Valid only when language font:Japanese is selected.

        Code : 〔1C〕h＋〔32〕h＋a1＋a2＋Dn

JIS code system: *[a1 = 77]h
                          *[21 ≤ a2 ≤ 7E]h
Shift JIS code system: *[a1 = EC]h
                          *[40 ≤ a2 ≤ 7E, 80 ≤ a2 ≤ 9E]h

Defines Additional Kanji Character.

*Enables to define up to 94 characters.

*"Dn" is data to define. Data will be 3 bytes(vertical) x 24 dots(horizontal) = 72 bytes

*All of the default statuses are "SPACE".

*Once defined by this command, it will be effective until execution of [Software Reset] and RESET switch or turning OFF the power.

*Only designated area will be redefined.

＜Example＞
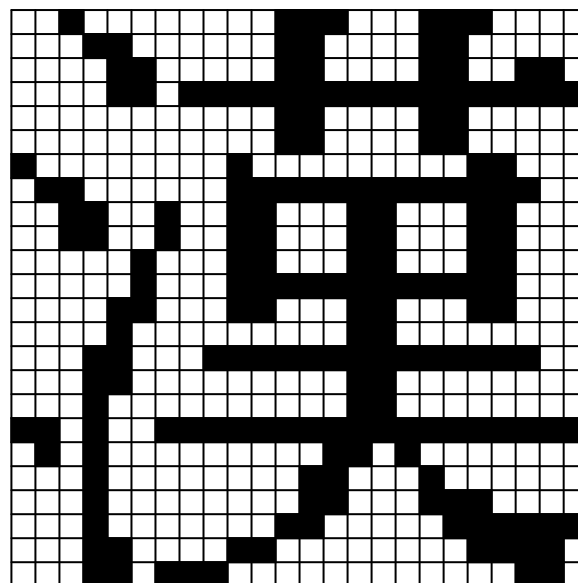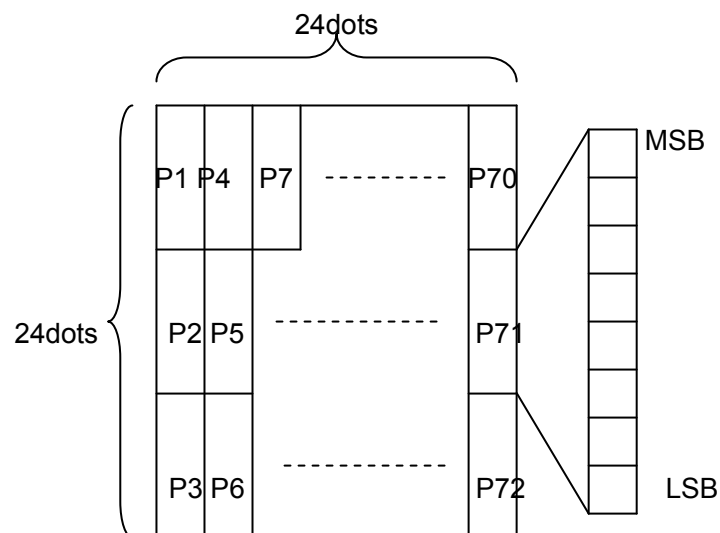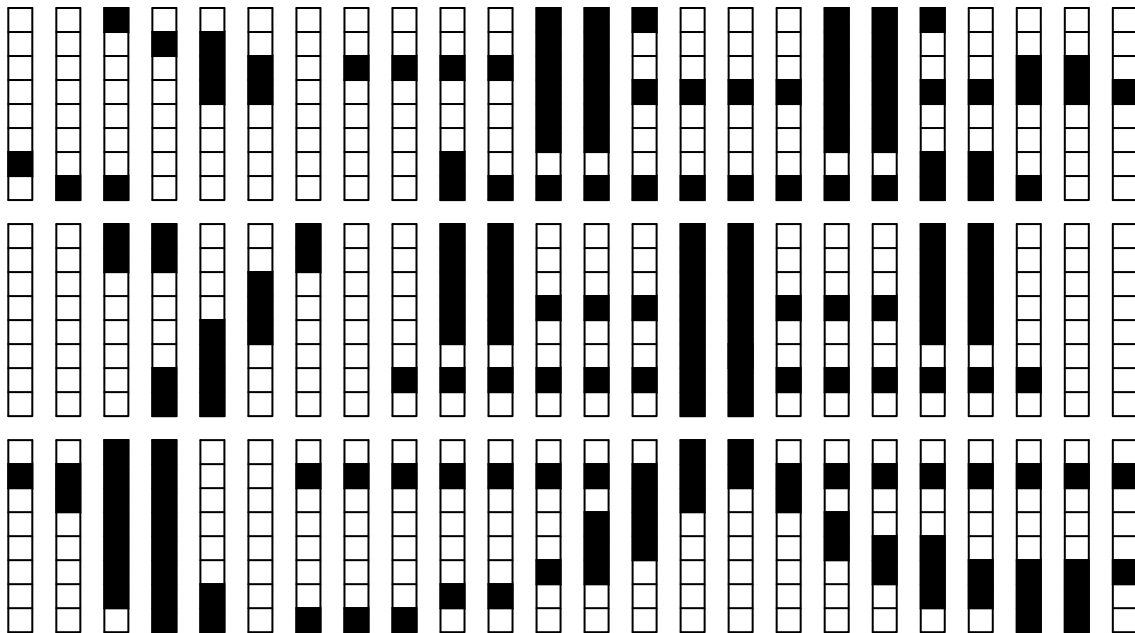
P1=〔02〕h,P4=〔01〕h,P7=〔81〕h,P10=〔40〕h,P13=〔70〕h,P16=〔30〕h,…
P2=〔00〕h,P5=〔00〕h,P8=〔C0〕h,P11=〔C3〕h,P14=〔0F〕h,P17=〔38〕h,…
P3=〔40〕h,P6=〔60〕h,P9=〔FE〕h,P12=〔FF〕h,P15=〔03〕h,P18=〔00〕h,…

63) ■[Japanese Kanji Code Selection] « FS C n »
   *It is effective when language font:Japanese is selected
      Code: [1C]h + [43]h + n   *[00 ≤ n ≤ 01]h
      Selects Japanese Kanji code system.
      *"n" has the following meaning.

n(hex)	Code
00	JIS code
01	Shift JIS code

      *Default status is setting of memory switch MS2-1.

64) [Japanese Kanji Space Amount Setting] « FS S n1 n2 »
      Code: [1C]h + [53]h + n1 + n2   *[00 ≤ n1 ≤ 20]h
                                                 *[00 ≤ n2 ≤ 20]h
      Sets right/left sides spaces of Japanese Kanji by dot unit.
      *"n1" sets left SPACE. Default value is [00]h.
      *"n2" sets right SPACE. Default value is [00]h.
      *Width of SPACE will be double when double width mode is selected.

65) [Character Table Code Selection] «FS T n»

Code: [1C]h + [54]h + n   *[n= 00, 01, 03]h

Switch built-in language font.

*"n" has the following.

n(hex)	Built-in language font
00	Japanese
01	Chinese
03	Greek

*Default value of "n" is set of memory switch (MS2-2, MS2-3).

*By executing [Printer Initialization], this setting will be returned to value set by memory switch (MS2-2, MS2-3).

66) [Quadruple Japanese Kanji Size SET/RESET] « FS W n »

Code: [1C]h + [57]h + n   *[00 ≤ n ≤ FF]h

SET/RESET Quadruple Japanese Kanji Character.

*Only LSB (least significant bit "b0") is available to "n".

"b0" has the following meaning.

b0	Function
0	RESET Quadruple
1	SET Quadruple

*Default value of "n" is [00]h.

67) [Page Layout Setting] 《ESC T Dt》
　*Page layout related command.
　　Code: [1B]h + [54]h + Dt 　　　　　　　*[00 ≤ Dt ≤ 03]h
　　Set page direction.
　　　*"Dt" has the following meaning.

Dt(hex)	Mode
00	Portrait mode(0 ˚)
01	Landscape mode(90˚)
02	Portrait mode(180˚)
03	Landscape mode(270˚)

　　　*Default value for "Dt" is [00]h (Portrait mode˚)
　　　*Initializes [Page Length Setting] and [Print Area Setting]
　　　* Print dragging may occur when printing barcode in landscape at 200mm/sec and unable to read out the barcode. In such case, take measure by lowering the print speed by [Maximum Print Speed Setting] or shortening length of the barcode.

68) [Page Length Setting] «ESC I DI»
　　*Page layout related command.
　　Code: [1B]h + [6C]h + DI
　　Sets page length.
　　*Enables to change paper feed length when page print by changing page length.
　　*Sets "DI" in "mm" for page length.
　　*Page length will vary to "Y" direction when portrait setting while "X" in landscape setting.
　　*Initialize [Page Expansion Print Area Setting]

69) [Page Lay Out Print Area Setting] «ESC W DI Dt Dw Dh»
　　*Page layout related command.
　　Code: [1B]h + [57]h + DI + Dt + Dw + Dh
　　Sets print area of page lay out.
　　*Sets "DI" for left margin, "Dt" for upper margin in "mm".
　　*Sets "Dw" for "X" direction print area, "Dh" for "Y" direction print area in "mm".
　　*Only effective at the head of a line.

« Portrait Mode »
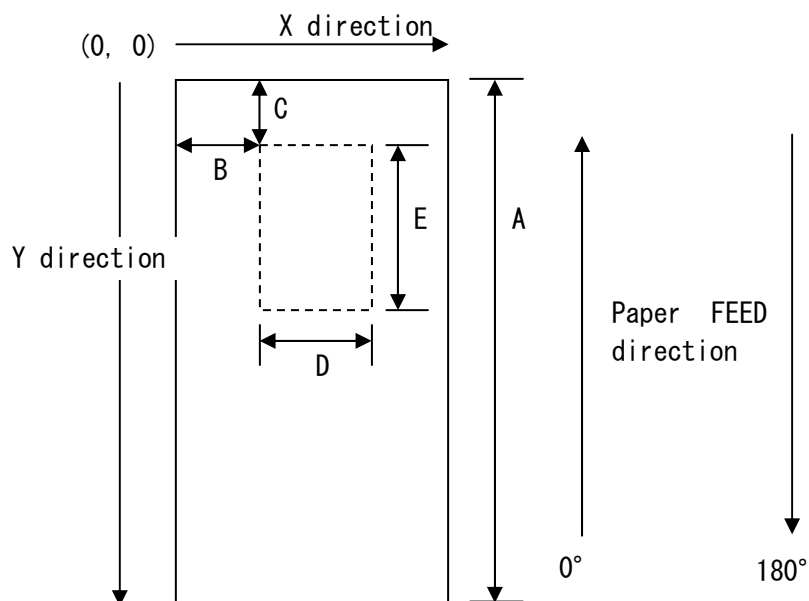
NP-2511

Mark	Name	Minimum	Maximum	Default Setting
A	Page length	3mm	160mm	160mm
B	Left Margin	0mm	53mm	3mm
C	Upper Margin	0mm	157mm	0mm
D	X print area	3mm	56mm	52mm
E	Y print area	3mm	160mm	160mm

NP-3511

Mark	Name	Minimum	Maximum	Default Setting
A	Page length	3mm	160mm	160mm
B	Left Margin	0mm	77mm	4mm
C	Upper Margin	0mm	157mm	0mm
D	X print area	3mm	80mm	72mm
E	Y print area	3mm	160mm	160mm

*Setting over 3mm for left/right margin is recommended. Refer to "2.3 Print Area".

« Landscape Mode »
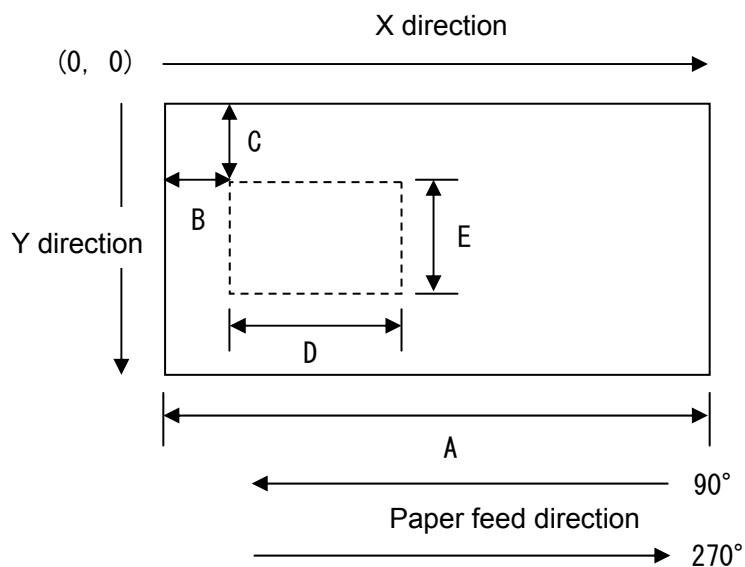
NP-2511

Mark	Name	Minimum	Maximum	Default Setting
A	Page length	3mm	160mm	160mm
B	Left Margin	0mm	157mm	0mm
C	Upper Margin	0mm	53mm	3mm
D	X print area	3mm	160mm	160mm
E	Y print area	3mm	56mm	52mm

NP-3511

Mark	Name	Minimum	Maximum	Default Setting
A	Page length	3mm	160mm	160mm
B	Left Margin	0mm	157mm	0mm
C	Upper Margin	0mm	77mm	4mm
D	X print area	3mm	160mm	160mm
E	Y print area	3mm	80mm	72mm

*Setting over 3mm for left/right margin is recommended. Refer to "2.3 Print Area".

70) [Page Print and Clear] « FF »
*Page print related command.
Code: [0C]h
Clear page buffer after printing contents of page buffer.
*Will be disregarded when using this command while command of [Buffer Print Start/Finish Setting].

71) [Page Print] « ESC FF n »
*Page print related command.
Code: [1B]h + [0C]h + n   *[00 ≤ n ≤ 01]h
Prints content of page buffer.
*"n" has the following meaning.

n(hex)	Mode
00	Page Print
01	Inverted Page Print

*Default value of "n" is [00]h. (Page Print)
*Inverted Page Print prints out with rotating page in 180º clockwise.
*Will be disregarded when using this command while command of [Buffer Print Start/Finish Setting].

72) [Page Buffer Clear] « CAN »
Page buffer clear related command.
Code: [18]h
Clears page buffer.

73) [Page Buffer Area Clear] « Esc CAN Dx1 Dx2 Dy1 Dy2 Dw1 Dw2 Dh1 Dh2 »
*Page buffer clear related command.
Code: [1B]h + [18]h + Dx1 + Dx2 + Dy1 + Dy2 + Dw1 + Dw2 + Dh1 + Dh2
Clears designated area of page buffer.
*Sets dot for "clear starting point" by (Dx2 x 256 + Dx1) for X-axis, (Dy2 x 256 + Dy1) for Y-axis.
*Sets dot for clear area by Dw2 x 256 + Dw1 for width, Dh2 x 256 + Dh1 for height.
*Coordinate origin shall be upper-left of print area.
*When "Clear Starting Point" is out of print area, it will forcibly shift into print area after clearing excessive coordinates to "0".

Clear Starting Point (X, Y)

Clear Area Height

Clear Area Width
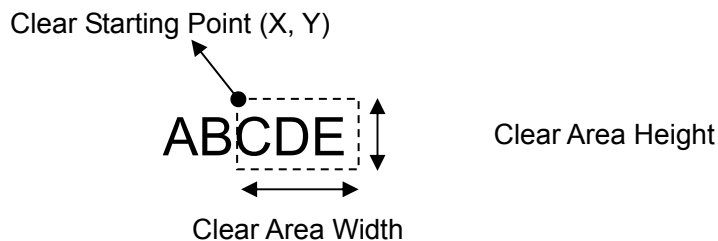
74) [Page Buffer Lay Out Start/Finish Setting] « ESC L n »
   *Page edit related command.
    Executes edit for page buffer with method of 1 or 2.
   *Will be disregarded if this command used   while command of [Buffer Print Start/Finish Setting].

1. Start/Finish setting for page buffer lay out (n = [00]h, [01]h)
   (1) [Page Buffer Lay Out Start Setting]
   Code: [1B]h + [4C]h + [01]h
   Starts page buffer lay out.
   *Executes lay out in line-at-a-time.
   *Initialize lay out position to upper-left of print area.

   (2) [Page Buffer Lay Out Finish Setting]
   Code: [1B]h + [4C]h + [00]h
   Finishes page buffer lay out.

2. Start/Finish setting for coordinate set page buffer lay out (n = [10]h, [11]h)
   (1) [Coordinate Set Page Buffer Lay Out Start Setting]
    Code: [1B]h + [4C]h + [11]h + Dx1 + Dx2 + Dy1 + Dy2 + Dt + Dv
    Starts page buffer lay out from set coordinate position.
   *Set dot for starting point with Dx2 x 256 + Dx1 for X-axis, Dy2 x 256 + Dy1 for Y-axis.
   *"Dt" sets rotation while "Dv" sets overlay.
   *Coordinate origin shall be upper-left of print area.
   *When "lay out starting point" is out of print area, it will forcibly shift into print area after
    clearing excessive coordinates to "0".
   *Execute lay out in object-at-a-time. (character string, barcode, bit image, raster bit
    image) Round off excessive part from print area.
   *Only flag changes in [Position Alignment]
   *Disregards [Fixed Bit Image Registration]
   *"Dt" has the following meaning.

Dt(hex)	Mode
00	No rotation
01	Rotation of 90° clockwise

   *"Dv" has the following meaning.

Dv(hex)	Mode
00	Overwrite background
01	Overlay background

   (2) [Coordinate Set Page Buffer Lay Out Finish Setting]
    Code: [1B]h + [4C]h + [10]h
    Finishes coordinate set page buffer lay out.

    *See page print sample on next page.

*Page Print Sample:

    (1) Page Layout Setting (Sets page direction)

    (2) Page Lay Out Print Area Setting

        Left margin/Upper margin = 0mm

        X direction print area = 80mm

        Y direction print area = 160mm

    (3) Page Buffer Lay Out Start

    (4) Background Image (Bit image: Checkerboard Design)

    (5) Page Buffer Lay Out Finish

    (6) Page Lay Out Print Area Setting (exam.1 / exam.2)

        Left margin/Upper margin = 4mm

        X direction print area = 72mm

        Y direction print area = 152mm

    (7) Page Buffer Lay Out Start (exam.1) / Coordinate Set Page Buffer Lay Out Start (exam.2)

    (8) Character String "ABCD" + [0a]h

    (9) [0a]h

    (10) LOGO image (bit image: NPI)

    (11) Page Buffer Lay Out Finish (exam.1)/Coordinate Set Page Buffer LayOut Finish(exam.2)

    (12) Page Print

Print Ex.1

Print Ex.2

* Overwrites in the range of
print area due to lay out in
line-at-a-time.

* Overwrites (overlays) in the
range of height and width of
the objects due to lay out in
object-at-a-time.

75) [Back Feed (mm unit)] «Gs J n»
    Code: [1D]h + [4A]h + n   *[00 ≤ n ≤ FF]h
    Feeds paper in reverse direction when receiving this command.
     *Assigns feeding amount "n" in "mm" unit. Does not feed when setting [00]h.
     *Backlash may affect assigned feeding amount to be incorrected.
     *In case there is print data remained inside the print line buffer memory, it will shift to the
      back feed after printing.
     *Make sure tip of the paper does not exceed the back feed limit
     (Please refer to product specifications 2.4 cutter specifications).

76) LED bezel setting «GS I n m»
    *This command is valid only with LED bezels [BEZ-320/330].
   Code: [1D]h + [6C]h + n + m   *[n=00]h
                                       *[00≦m≦02]h

        Set emitting patterns of LED bezels.
・"m" has meanings as below.

m(hex)	Function
00	Disable emitting operation
01	LED (Blue) blinks under suspension of paper feeding or printing with paper kept in bezel sensor. LED (Red) blinks during paper feeding or printing with paper kept in a bezel sensor.
02	LED (Blue) blinks when there is no error except near-end with paper kept in a bezel sensor. LED (Red) lights or blinks, synchronized with alarm lamp of operation panel when error .
03	Reserve

 *Default value of m is [01]h.
 *This command is valid until [Reset software], Reset switch, or Switch OFF is executed.
 *Same movement as m=[01]h when m=[03]h designated. .
 *LED may black out once when this command is used with bezel sensor detecting paper.

・Emission patterns of LED light   In case m= 〔01〕h

Printer status	Display pattern	Color
Printing or feeding paper is not being executed with paper in a bezel sensor.		Blue
Printing or feeding paper is being executed with paper in a bezel sensor.		Red

・Emission patterns of LED light   In case m= 〔02〕h

Printer status	Display pattern	Color
Paper in a bezel sensor (No error except near end)		Blue
Paper in a bezel sensor (when there's error except near end)		Red
No paper in a bezel sensor (When there is Error)	Refer to Product Specifications [4.6 (1) Alarm lamp].	Red

77) [QMS character print] 《FS k n Dn NUL》

   Code: [1C]h + [6B]h + n + Dn + [00] h   * 〔00≦n≦12〕h

 Activates QMS printing.

 *Line head will be next start position of printing.

 *Select following printing magnification by value of "n"

n(hex)	Type
00	Quadruple　（2×2）
01	Nonuple　（3×3）
02	Sixteen times　（4×4）
10	Bold quadruple　（2×2）
11	Bold nonuple　（3×3）
12	Bold sixteen times（4×4）

 *Dn indicates character code to print, and valid characters are "A"~"Z" and

"0"~"9"of ASCII code.

  *If Dn is unable character to print, data after that will be treated as normal print.

  *Printing is not executed when the length of landscape exceeds the length of 1 line.

78) [Registration of User Code Page] 《GS & n Dn》

   Code: [1D]h + [26] + n + Dn   ＊〔00≦n≦01〕h

 Activates Registration of User Code Page.

n(hex)	Type of font
00	User Code Page Font A (12x24)
01	User Code Page Font B　(9x17)

 *Dn indicates registration font data. Date format is Rasta format.

 *Select [00]h for all the data not to register because 10752 byte for 224 characters data

 is necessary.

 [2byte wide by 24byte height] x 224 characters ([20]h~[FF]h)

 *Able to register in [7F]h, [FF]h, too.

＜Reference example＞
In case of A

d1 = 〔00〕h,	d2 = 〔00〕h
d3 = 〔00〕h,	d4 = 〔00〕h
d5 = 〔06〕h,	d6 = 〔00〕h
d7 = 〔06〕h,	d8 = 〔00〕h
d9 = 〔06〕h,	d10= 〔00〕h
d11= 〔0F〕h,	d12= 〔00〕h
d13= 〔0F〕h,	d14= 〔00〕h
d15= 〔0F〕h,	d16= 〔00〕h
d17= 〔19〕h,	d18= 〔80〕h
d19= 〔19〕h,	d20= 〔80〕h
d21= 〔19〕h,	d22= 〔80〕h
d23= 〔19〕h,	d24= 〔80〕h
d25= 〔30〕h,	d26= 〔C0〕h
d27= 〔3F〕h,	d28= 〔C0〕h
d29= 〔3F〕h,	d30= 〔C0〕h
d31= 〔30〕h,	d32= 〔C0〕h
d33= 〔60〕h,	d34= 〔60〕h
d35= 〔60〕h,	d36= 〔60〕h
d37= 〔60〕h,	d38= 〔60〕h
d39= 〔60〕h,	d40= 〔60〕h
d41= 〔60〕h,	d42= 〔60〕h
d43= 〔60〕h,	d44= 〔60〕h
d45= 〔00〕h,	d46= 〔00〕h
d47= 〔00〕h,	d48= 〔00〕h

24dot

12dot
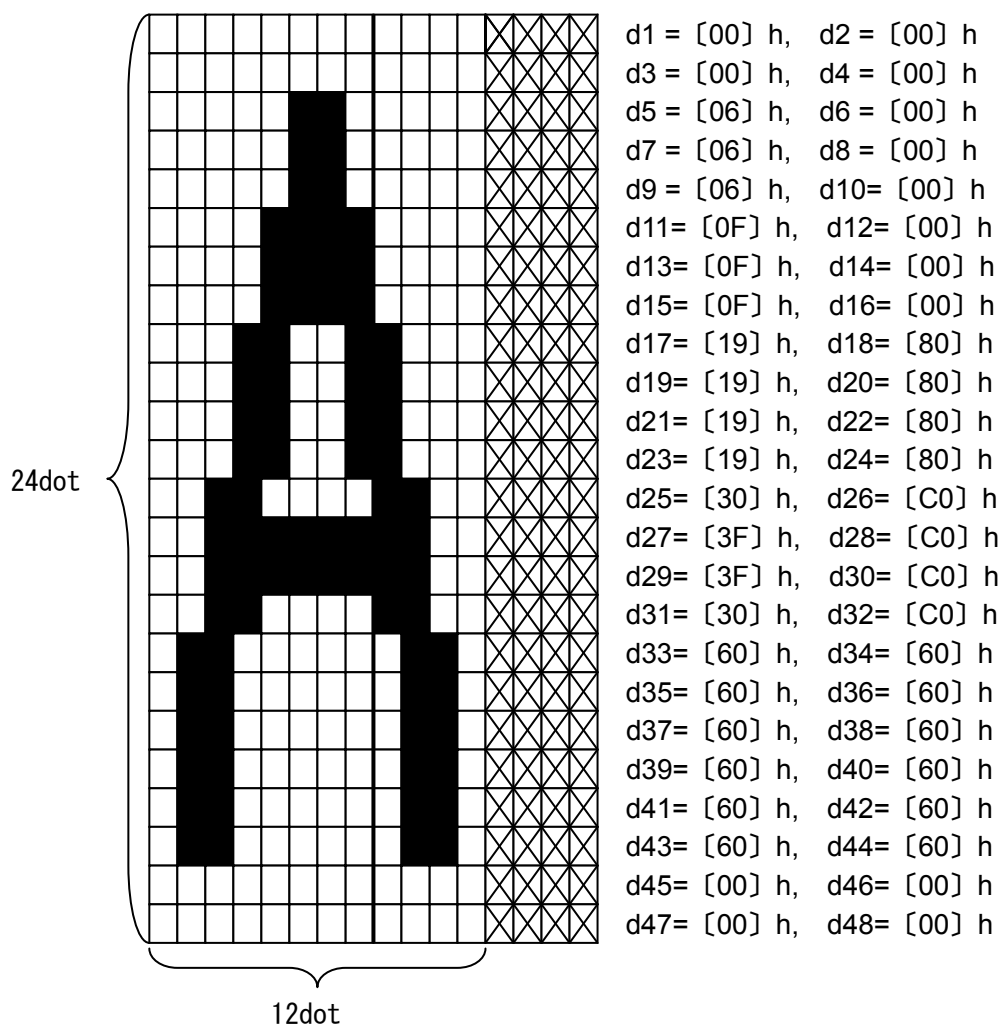
⊠ : dummy data.
Dummy data should be 0 when it is registered.

＜Reference example＞
In case of B
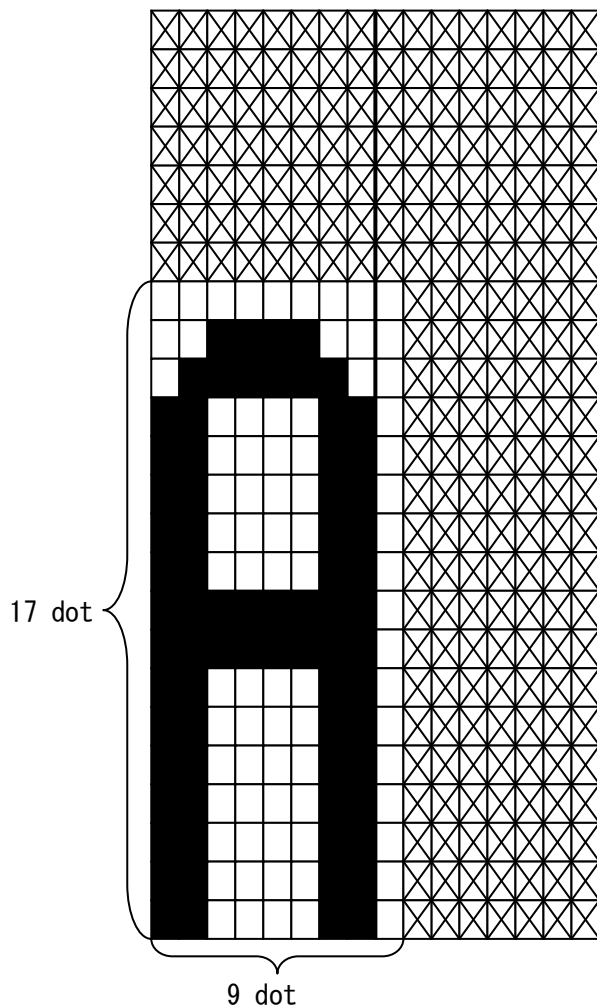
d1 = [00] h,	d2 =00] h
d3 = [00] h,	d4 =00] h
d5 = [00] h,	d6 =00] h
d7 = [00] h,	d8 =00] h
d9 = [00] h,	d10=00] h
d11= [00] h,	d12=00] h
d13= [00] h,	d14=00] h
d15= [00] h,	d16=00] h
d17= [3C] h,	d18=00] h
d19= [7E] h,	d20=00] h
d21= [C3] h,	d22=00] h
d23= [C3] h,	d24=00] h
d25= [C3] h,	d26=00] h
d27= [C3] h,	d28=00] h
d29= [C3] h,	d30=00] h
d31= [FF] h,	d32=00] h
d33= [FF] h,	d34=00] h
d35= [C3] h,	d36=00] h
d37= [C3] h,	d38=00] h
d39= [C3] h,	d40=00] h
d41= [C3] h,	d42=00] h
d43= [C3] h,	d44=00] h
d45= [C3] h,	d46=00] h
d47= [C3] h,	d48=00] h

17 dot

9 dot

⊠ : Dummy data should be 0 when it is registered.

79) [USB serial No. setting] 《GS U Dn》
        Code: [1D]h + [55]h +Dn
        Activate seting USB serial number.
      *Dn indicates data of USB serial No.
      *""([20]h), "-"([2D]h), "/"([2F]h), [30]h~[7A]h are available for 8 byte fixed length.
      *In case Dn= [00]h (1byte), No USB serial No. is set.
      *USB serial No. on this setting will be valid from the next USB reconnection.
      *Default value is No USB serial No.

80) [QR code printing(Model2)] 《ESC q S E V M》
   Code: 〔1B〕h+〔71〕h+S+E+V+M+n1+n2+Dn
   Conduct QR code(Model2) printing

Parameter Explaination

①S：Modelu size
   ・Select 1 module size of QR code by dot number of printer.
   ・Selectable size is 1～20 dots.
   ・When invalid size is selected, 4 dots will be selected.(Reading is not guranteed when
      module size 1, 2, 3 are selected due to resolution of printer mechanism.

②E：Error correcting level
   ・Please select error correcting level for recovering of symbol.
   ・Selectable value is as below.
   ・When invalid value is selected, error correcting level will be "L".

E	Error correcting level	Ability for recovering(%)
0	L	7
1	M	15
2	Q	25
3	H	30

③V：Model number(Version)
   ・Please select module number of QR code by model number.
   ・Selectable model number is 0～40.
   ・Model number 0 is set with version to automatically become minimum depending on data
      number.
   ・Model number 1～40 select 21x21～177x177 module.
   (4 modules are incleased every increase by one model number).
   ・When invalid value is selected, model number will be 0(automatically).
   ・if character string over capacity of selected model number is assigned, model number will
      be expanded automatically and printed.

④M：Mask pattern
   ・Selectable mask pattern is between 0～8.
   ・Optimal mask pattern will be set for mask pattern 0. *1
   ・When invalid value is selected, mask pattern will be 5.

*1 Please use model number 10 or less when use of optimization because it takes time
   although optimization proceeding of mask pattern is made based on specification of QR
   code

⑤n1 n2：Data Byte number
   ・Please assign data Byte number(n2＊256＋n1).

⑥Dn：Character string data
   ・Please assign character code to print.
   ・Please enter Japanese Kanji data with shift JIS code.

・QR code printing will not be operated when generated QR code symbol exceeds the printing area.
・The amount of paper feed will be the amount of QR code height regardless of line feed set by ESC
   2, ESC 3, etc.

・When printing data is in print line buffer, QR code printing will be operated after printing the data.
・No influence to printing mode(Enhanced printing, Double strike printing, Underline, etc.) except inverted printing.
・Print area setting command and Position alignment command are valid.(Ablosute position and relative position are invalid)

81) [Module width size of PDF417 setting] 《GS n n》
　　　　Code: 〔1D〕h＋〔6E〕h＋n 　　　　　　　　　　　* 〔02≦n≦04〕h
　　　Select module width size of PDF417.
　　　　・Default value of "n" is 〔03〕h.
　　　　・When out of range, it will be disregarded and not changed.

82) [PDF417 printing] 《GS p e h nl nh [d]k》
　　　　Code : 〔1D〕h＋〔70〕h＋e＋h＋hl＋nh＋[d]k 　　　* 〔00≦e≦08〕h,e=〔FF〕h
　　　　Activate PDF417 print. 　　　　　　　　　　　　* 〔01≦h≦06〕h
　　　・"e" is error correcting level.(e=〔FF〕h is auto-setting)
　　　　When out of range, it will be〔00〕h.
　　　・"h" indicates height ratio. (The value is for how many times step height of symbol is bigger than module width size)
　　　　When it is out of range, it will be〔03〕h.
　　　・nl is the low side of data length.
　　　・nh is the high side of data length.
　　　・1≦k (=nh×256＋nl) ≦5420 . The data out of range will be disregarded for the assigned amount and this command will be invalid.
　　　・"d" is a data
　　　・When generated PDF417 symbol exceeds the printable area, PDF417 will not be printed.
　　　・The amount of paper feed will be the amount of height of PDF417 regardless of the amount of paper feed set by ESC 2, ESC 3.
　　　・If there is printing data in print line buffer, PDF417 printing will be operated after printing the data.
　　　・No influence to printing mode(Enhanced printing, Double strike printing, Underline, etc.) except inverted printing.
　　　・Print area setting command and Position alignment command are valid.(Ablosute position and relative position are invalid)

3. Character Code Table

3.1 Domestic Character Code Table (International Character Set: Japanese)

HEX	BIN	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
HEX	BIN	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
0	0000	NUL		SP	0	@	P	`	p	▁	┴	SP	ー	タ	ミ	＝	✕
1	0001		DC1	!	1	A	Q	a	q	▂	┬	｡	ア	チ	ム	├	円
2	0010			"	2	B	R	b	r	▃	┤	｢	イ	ツ	メ	┼	年
3	0011		DC3	#	3	C	S	c	s	▄	┠	｣	ウ	テ	モ	┤	月
4	0100			$	4	D	T	d	t	▅	▔	､	エ	ト	ヤ	◢	日
5	0101			%	5	E	U	e	u	▆	─	･	オ	ナ	ユ	◣	時
6	0110			&	6	F	V	f	v	▇	│	ｦ	カ	ニ	ヨ	◥	分
7	0111			'	7	G	W	g	w	█	│	ｧ	キ	ヌ	ラ	◤	秒
8	1000			(	8	H	X	h	x	▏	┌	ｨ	ク	ネ	リ	♠	〒
9	1001	HT		)	9	I	Y	i	y	▎	┐	ｩ	ケ	ノ	ル	♥	市
A	1010	LF		*	:	J	Z	j	z	▍	└	ｪ	コ	ハ	レ	♦	区
B	1011		ESC	+	;	K	[	k	{	▌	┘	ｫ	サ	ヒ	ロ	♣	町
C	1100	FF	FS	,	<	L	¥	l	¦	▋	⌐	ｬ	シ	フ	ワ	●	村
D	1101	CR	GS	-	=	M	]	m	}	▊	╲	ｭ	ス	ヘ	ン	○	人
E	1110		RS	.	>	N	^	n	~	█	╲	ｮ	セ	ホ	゛	/	▒
F	1111			/	?	O	_	o	SP	┼	ノ	ｯ	ソ	マ	゜	\	SP

*[SP] indicates Space.

*[CR] is disregarded.

*Printer operation cannot be guaranteed if the blank control code (codes below [1F]h) is transmitted to printer.

*This code table indicates simplified symbol and is not print result. There may be some difference from the actual print

3.2 Overseas Character Code (International Set: USA)

HEX	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
HEX / BIN	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
0 / 0000	NUL		SP	0	@	P	`	p	€	É	á	▒	└	╨	α	≡
1 / 0001		DC1	!	1	A	Q	a	q	ü	æ	í	▒	┴	╤	β	±
2 / 0010			"	2	B	R	b	r	é	Æ	ó	▒	┬	π	Γ	≤
3 / 0011		DC3	#	3	C	S	c	s	â	ô	ú	│	├	╙	π	≥
4 / 0100			$	4	D	T	d	t	ä	ö	ñ	┤	─	╘	Σ	∫
5 / 0101			%	5	E	U	e	u	à	ò	Ñ	╡	┼	F	σ	J
6 / 0110			&	6	F	V	f	v	å	û	a	╢	╞	π	μ	÷
7 / 0111			'	7	G	W	g	w	ç	ù	o	╖	╫	τ	≈	
8 / 1000			(	8	H	X	h	x	ê	ÿ	¿	╕	╪	Φ	°	
9 / 1001	HT		)	9	I	Y	i	y	ë	Ö	⌐	╣	╓	θ	·	
A / 1010	LF		*	:	J	Z	j	z	è	Ü	¬	║	╨	Ω	·	
B / 1011		ESC	+	;	K	[	k	{	ï	¢	½	╗	╤	■	δ	√
C / 1100	FF	FS	,	<	L	¥	l	¦	î	£	¼	╝	╟	■	∞	n
D / 1101	CR	GS	−	=	M	]	m	}	ì	¥	¡	╜	═	▌	ø	²
E / 1110		RS	.	>	N	^	n	~	Ä	₧	«	╛	╬	▐	∈	▮
F / 1111			/	?	O	_	o	SP	Å	ƒ	»	┐	╧	▄	∩	SP

*[SP] indicates Space.

*[CR] is disregareded.

*Printer operation cannot be guaranteed if the blank control code (codes below [1F]h) is transmitted to printer.

*This code table indicates simplified symbol and is not print result. There may be some difference from the actual print

3.3 CODE PAGE 858

HEX		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
HEX	BIN	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
0	0000	NUL		SP	0	@	P	`	p	Ç	É	á	▓	└	ð	Ó	-
1	0001		DC1	!	1	A	Q	a	q	ü	æ	í	▒	⊥	Đ	ß	±
2	0010			"	2	B	R	b	r	é	Æ	ó	▓	┬	Ê	Ô	=
3	0011		DC3	#	3	C	S	c	s	â	ô	ú	│	├	Ë	Ò	¾
4	0100			$	4	D	T	d	t	ä	ö	ñ	┤	—	È	õ	¶
5	0101			%	5	E	U	e	u	à	ò	Ñ	Á	┼	€	Õ	§
6	0110			&	6	F	V	f	v	å	û	ª	Â	ã	Í	µ	÷
7	0111			'	7	G	W	g	w	ç	ù	º	À	Ã	Î	þ	¸
8	1000			(	8	H	X	h	x	ê	ÿ	¿	©	└	Ï	þ	°
9	1001	HT		)	9	I	Y	i	y	ë	Ö	®	┤	┌	┘	Ú	¨
A	1010	LF		*	:	J	Z	j	z	è	Ü	¬	║	┴	┌	Û	-
B	1011		ESC	+	;	K	[	k	{	ï	ø	½	┐	┬	█	Ù	¹
C	1100	FF	FS	,	<	L	\	l	|	î	£	¼	┘	├	▄	ý	³
D	1101	CR	GS	-	=	M	]	m	}	ì	Ø	¡	¢	=	¦	Ý	²
E	1110		RS	.	>	N	^	n	~	Ä	×	«	¥	┴	Ì	┐	■
F	1111			/	?	O	_	o	SP	Å	ƒ	»	┐	¤	█	´	SP

*[SP] indicates Space.

*[CR] is disregarded.

*Printer operation cannot be guaranteed if the blank control code (codes below [1F]h) is transmitted to printer.

*This code table indicates simplified symbol and is not print result. There may be some difference from the actual print

3.4 International code table

n	Character set	23h	24h	40h	5Bh	5Ch	5Dh	5Eh	60h	7Bh	7Ch	7Dh	7Eh
00h	USA	#	$	@	[	\	]	^	`	{	¦	}	~
01h	France	#	$	à	°	ç	§	^	`	é	ù	è	¨
02h	Germany	#	$	§	Ä	Ö	Ü	^	`	ä	ö	ü	ß
03h	UK	£	$	@	[	\	]	^	`	{	¦	}	~
04h	Denmark I	#	$	@	Æ	Ø	Å	^	`	æ	ø	å	~
05h	Sweden	#	¤	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü
06h	Italy	#	$	@	°	\	é	^	ù	à	ò	è	ì
07h	Spain I	₧	$	@	¡	Ñ	¿	^	`	¨	ñ	}	~
08h	Japan	#	$	@	[	¥	]	^	`	{	¦	}	~
09h	Norway	#	¤	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
0Ah	Denmark II	#	$	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
0Bh	Spain II	#	$	á	¡	Ñ	¿	é	`	í	ñ	ó	ú
0Ch	Latin America	#	$	á	¡	Ñ	¿	é	ü	í	ñ	ó	ú

*This code table indicates simplified symbol and is not print result. There may be some difference from the actual print

3.5 CODE PAGE 1250

HEX	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
HEX / BIN	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
0 (0000)	NUL		SP	0	@	P	`	p	€	SP	SP	°	Ŕ	Đ	ŕ	đ
1 (0001)		DC1	!	1	A	Q	a	q	SP	'	ˇ	±	Á	Ń	á	ń
2 (0010)			"	2	B	R	b	r	,	'	˘	¸	Â	Ň	â	ň
3 (0011)		DC3	#	3	C	S	c	s	SP	"	Ł	†	Ă	Ó	ă	ó
4 (0100)			$	4	D	T	d	t	„	"	¤	´	Ä	Ô	ä	ô
5 (0101)			%	5	E	U	e	u	…	•	Ą	µ	Ĺ	Ő	ĺ	ő
6 (0110)			&	6	F	V	f	v	†	–	¦	¶	Ć	Ö	ć	ö
7 (0111)			'	7	G	W	g	w	‡	—	§	·	Ç	×	ç	÷
8 (1000)			(	8	H	X	h	x	SP	SP	¨	¸	Č	Ř	č	ř
9 (1001)	HT		)	9	I	Y	i	y	‰	™	©	ą	É	Ů	é	ů
A (1010)	LF		*	:	J	Z	j	z	Š	š	Ş	ş	Ę	Ú	ę	ú
B (1011)		ESC	+	;	K	[	k	{	‹	›	«	»	Ë	Ű	ë	ű
C (1100)	FF	FS	,	<	L	\	l	|	Ś	ś	¬	L'	Ě	Ü	ě	ü
D (1101)	CR	GS	−	=	M	]	m	}	Ť	ť	-	˝	Í	Ý	í	ý
E (1110)		RS	.	>	N	^	n	~	Ž	ž	®	ľ	Î	Ţ	î	ţ
F (1111)			/	?	O	_	o	SP	Ź	ź	Ż	ż	Ď	ß	ď	˙

*[SP] indicates Space.

*[CR] is disregarded.

*Printer operation cannot be guaranteed if the blank control code (codes below [1F]h) is transmitted to printer.

*This code table indicates simplified symbol and is not print result. There may be some difference from the actual print

3.6 CODE PAGE 1251

HEX		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
HEX	BIN	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
0	0000	NUL		SP	0	@	P	`	p	ђ	ђ	SP	°	А	Р	а	р
1	0001		DC1	!	1	A	Q	a	q	ѓ	'	ў	±	Б	С	б	с
2	0010			"	2	B	R	b	r	‚	'	ў	I	В	Т	в	т
3	0011		DC3	#	3	C	S	c	s	ѓ	"	J	i	Г	У	г	у
4	0100			$	4	D	T	d	t	„	"	¤	Г	Д	Ф	д	ф
5	0101			%	5	E	U	e	u	…	•	Ѓ	µ	Е	Х	е	х
6	0110			&	6	F	V	f	v	†	–	¦	¶	Ж	Ц	ж	ц
7	0111			'	7	G	W	g	w	‡	—	§	·	З	Ч	з	ч
8	1000			(	8	H	X	h	x	€	SP	Ё	ё	И	Ш	и	ш
9	1001		HT	)	9	I	Y	i	y	‰	™	©	№	Й	Щ	й	щ
A	1010		LF	*	:	J	Z	j	z	Љ	љ	Є	є	К	Ъ	к	ъ
B	1011		ESC	+	;	K	[	k	{	‹	›	«	»	Л	Ы	л	ы
C	1100	FF	FS	,	<	L	\	l			Њ	њ	¬	ј	М	Ь	м	ь
D	1101	CR	GS	–	=	M	]	m	}	Ќ	ќ	-	S	Н	Э	н	э
E	1110		RS	.	>	N	^	n	~	Ћ	ћ	®	s	О	Ю	о	ю
F	1111			/	?	O	_	o	SP	Џ	џ	Ї	ї	П	Я	п	я

*[SP] indicates Space.

*[CR] is disregarded.

*Printer operation cannot be guaranteed if the blank control code (codes below [1F]h) is transmitted to printer.

*This code table indicates simplified symbol and is not print result. There may be some difference from the actual print

3.7 CODE PAGE 1252

	HEX	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
HEX	BIN	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
0	0000	NUL		SP	0	@	P	`	p	€	SP	SP	°	À	Ð	à	ð
1	0001		DC1	!	1	A	Q	a	q	SP	'	¡	±	Á	Ñ	á	ñ
2	0010			"	2	B	R	b	r	,	'	¢	²	Â	Ò	â	ò
3	0011		DC3	#	3	C	S	c	s	ƒ	"	£	³	Ã	Ó	ã	ó
4	0100			$	4	D	T	d	t	„	"	¤	´	Ä	Ô	ä	ô
5	0101			%	5	E	U	e	u	…	•	¥	µ	Å	Õ	å	õ
6	0110			&	6	F	V	f	v	†	–	¦	¶	Æ	Ö	æ	ö
7	0111			'	7	G	W	g	w	‡	—	§	·	Ç	×	ç	÷
8	1000			(	8	H	X	h	x	ˆ	~	¨	¸	È	Ø	è	ø
9	1001	HT		)	9	I	Y	i	y	‰	™	©	¹	É	Ù	é	ù
A	1010	LF		*	:	J	Z	j	z	Š	š	ª	º	Ê	Ú	ê	ú
B	1011		ESC	+	;	K	[	k	{	‹	›	«	»	Ë	Û	ë	û
C	1100	FF	FS	,	<	L	\	l	|	Œ	œ	¬	¼	Ì	Ü	ì	ü
D	1101	CR	GS	–	=	M	]	m	}	SP	SP	-	½	Í	Ý	í	ý
E	1110		RS	.	>	N	^	n	~	Ž	ž	®	¾	Î	Þ	î	þ
F	1111			/	?	O	_	o		SP	SP	Ÿ	¿	Ï	ß	ï	ÿ

*[SP] indicates Space.

*[CR] is disregarded.

*Printer operation cannot be guaranteed if the blank control code (codes below [1F]h) is transmitted to printer.

*This code table indicates simplified symbol and is not print result. There may be some difference from the actual print

3.8 CODE PAGE 1253

HEX	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
HEX BIN	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
0 0000	NUL		SP	0	@	P	`	p	€	SP	SP	°	ΐ	Π	ϋ	π
1 0001		DC1	!	1	A	Q	a	q	SP	΄	΅	±	Α	Ρ	α	ρ
2 0010			"	2	B	R	b	r	,	¨	Ά	²	Β	SP	β	ς
3 0011		DC3	#	3	C	S	c	s	ƒ	"	£	³	Γ	Σ	γ	σ
4 0100			$	4	D	T	d	t	„	"	¤	΄	Δ	Τ	δ	τ
5 0101			%	5	E	U	e	u	…	·	¥	μ	Ε	Υ	ε	υ
6 0110			&	6	F	V	f	v	†	–	¦	¶	Ζ	Φ	ζ	φ
7 0111			'	7	G	W	g	w	‡	—	§	·	Η	Χ	η	χ
8 1000			(	8	H	X	h	x	SP	SP	¨	Έ	Θ	Ψ	θ	φ
9 1001	HT		)	9	I	Y	i	y	‰	™	©	Ή	Ι	Ω	ι	ω
A 1010	LF		*	:	J	Z	j	z	SP	SP	SP	Ί	Κ	Ϊ	κ	ϊ
B 1011		ESC	+	;	K	[	k	{	<	>	«	»	Λ	Ϋ	λ	ϋ
C 1100	FF	FS	,	<	L	\	l	|	SP	SP	¬	Ό	Μ	ά	μ	ό
D 1101	CR	GS	–	=	M	]	m	}	SP	SP	–	½	Ν	έ	ν	ύ
E 1110		RS	.	>	N	^	n	~	SP	SP	®	Ύ	Ξ	ή	ξ	ώ
F 1111			/	?	O	_	o		SP	SP	SP	—	Ώ	Ο	ί	o	SP

*[SP] indicates Space.

*[CR] is disregarded.

*Printer operation cannot be guaranteed if the blank control code (codes below [1F]h) is transmitted to printer.

*This code table indicates simplified symbol and is not print result. There may be some difference from the actual print

HEX		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
HEX	BIN	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
0	0000	NUL		SP	0	@	P	`	p	€	SP	SP	°	À	Ğ	à	ğ
1	0001		DC1	!	1	A	Q	a	q	SP	'	¡	±	Á	Ñ	á	ñ
2	0010			"	2	B	R	b	r	,	'	¢	²	Â	Ò	â	ò
3	0011		DC3	#	3	C	S	c	s	ƒ	"	£	³	Ã	Ó	ã	ó
4	0100			$	4	D	T	d	t	„	"	¤	´	Ä	Ô	ä	ô
5	0101			%	5	E	U	e	u	…	•	¥	µ	Å	Õ	å	õ
6	0110			&	6	F	V	f	v	†	–	¦	¶	Æ	Ö	æ	ö
7	0111			'	7	G	W	g	w	‡	—	§	·	Ç	×	ç	÷
8	1000			(	8	H	X	h	x	^	~	¨	¸	È	Ø	è	ø
9	1001	HT		)	9	I	Y	i	y	‰	™	©	¹	É	Ù	é	ù
A	1010	LF		*	:	J	Z	j	z	Š	š	ª	º	Ê	Ú	ê	ú
B	1011		ESC	+	;	K	[	k	{	‹	›	«	»	Ë	Û	ë	û
C	1100	FF	FS	,	<	L	\	l	|	Œ	œ	¬	¼	Ì	Ü	ì	ü
D	1101	CR	GS	−	=	M	]	m	}	SP	SP	-	½	Í	İ	í	ı
E	1110		RS	.	>	N	^	n	~	SP	SP	®	¾	Î	Ş	î	ş
F	1111			/	?	O	_	o	SP	SP	Ÿ	¯	¿	Ï	ß	ï	ÿ

*[SP] indicates Space.

*[CR] is disregarded.

*Printer operation cannot be guaranteed if the blank control code (codes below [1F]h) is transmitted to printer.

*This code table indicates simplified symbol and is not print result. There may be some difference from the actual print